

XCEL ENERGY RE-TOU TRIAL

2019 PRESENTATION TO STAKEHOLDERS

NOVEMBER 18, 2019



IMPACT ANALYSIS FINDINGS

2019 RE-TOU FINDINGS

Participant Data

- **5,713** non-solar RE-TOU participants *and* **2,943** RE-TOU control group customers
- **929** solar RE-TOU participants *and* **641** RE-TOU matched control group customers

Demand Impacts

- **3.2% average Summer reduction** in on-peak demand for non-solar participants without EV
- **3.1% average Winter reduction** in on-peak demand for non-solar participants without EV
- **35% average Summer reduction** in gross on-peak demand for solar participants
- **30% average Winter reduction** in gross on-peak demand for solar participants

Energy Impacts

- **1.2% increase** in Summer average monthly energy consumption for non-solar participants without EV
- **0.3% increase** in Winter average monthly energy consumption for non-solar participants without EV
- **5.7% decrease** in Summer average gross monthly net energy consumption for solar participants
- **13.5% increase** in Winter average gross monthly energy consumption for solar participants

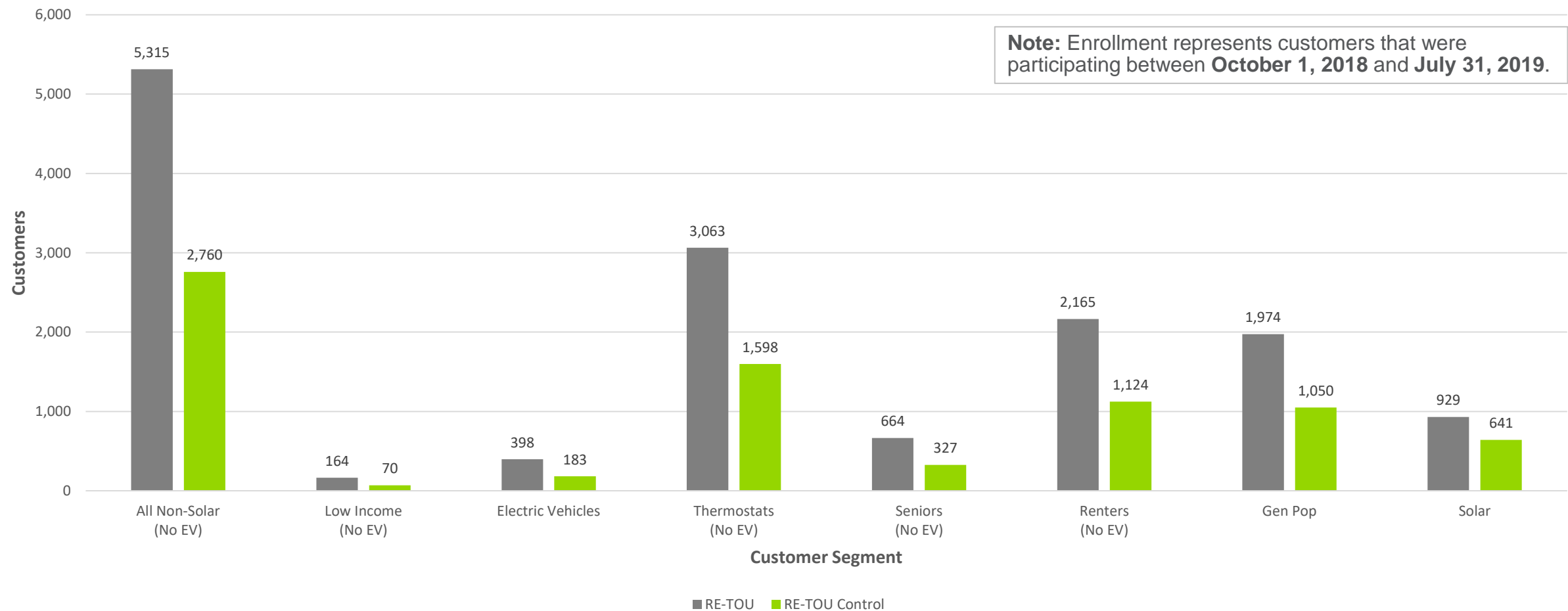
Bill Impacts

- Average non-solar (non-EV) participant's annual bill is increasing 2.2% (or \$18.07)
- Average solar participant's annual bill is decreasing 13% (or -\$129.28)

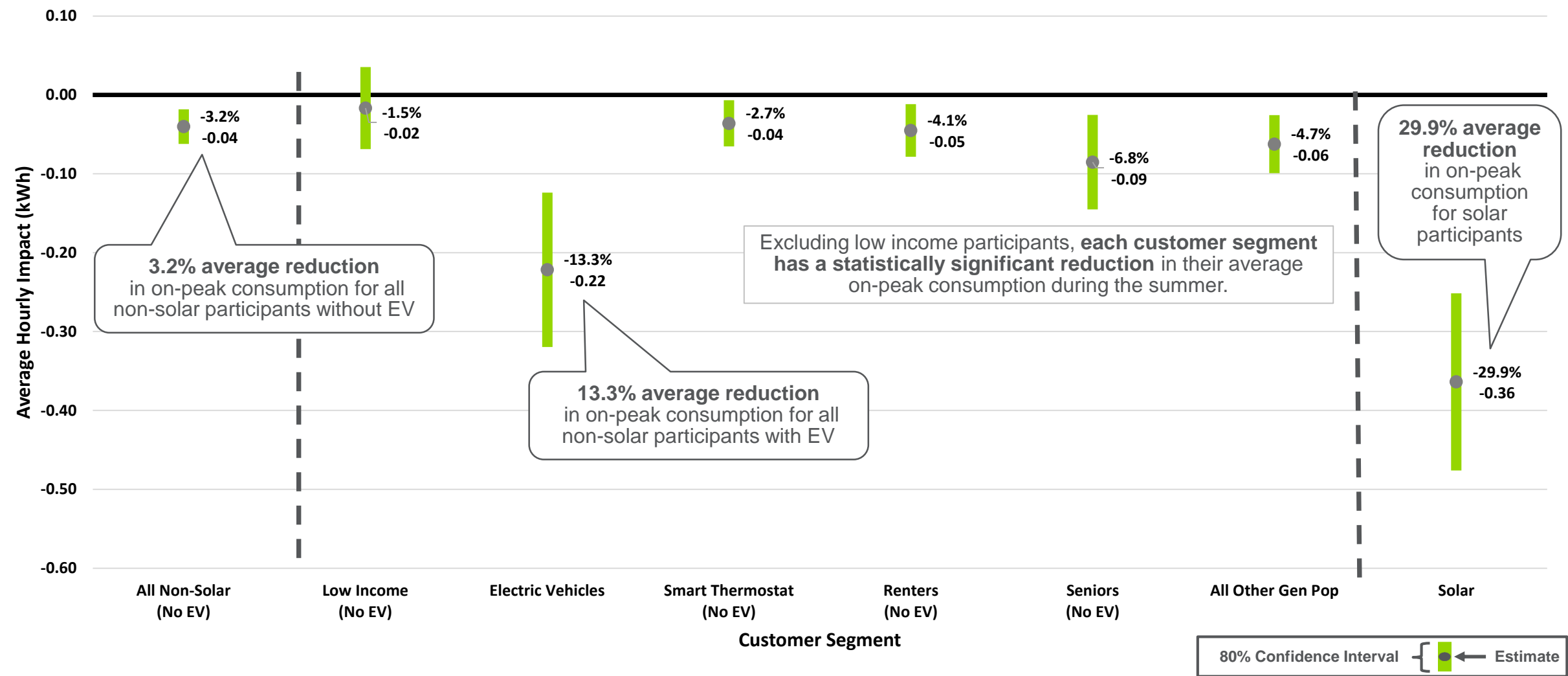
RE-TOU SAMPLE SIZE

PARTICIPANTS AND CONTROLS DURING 2018/2019 EVALUATION YEAR

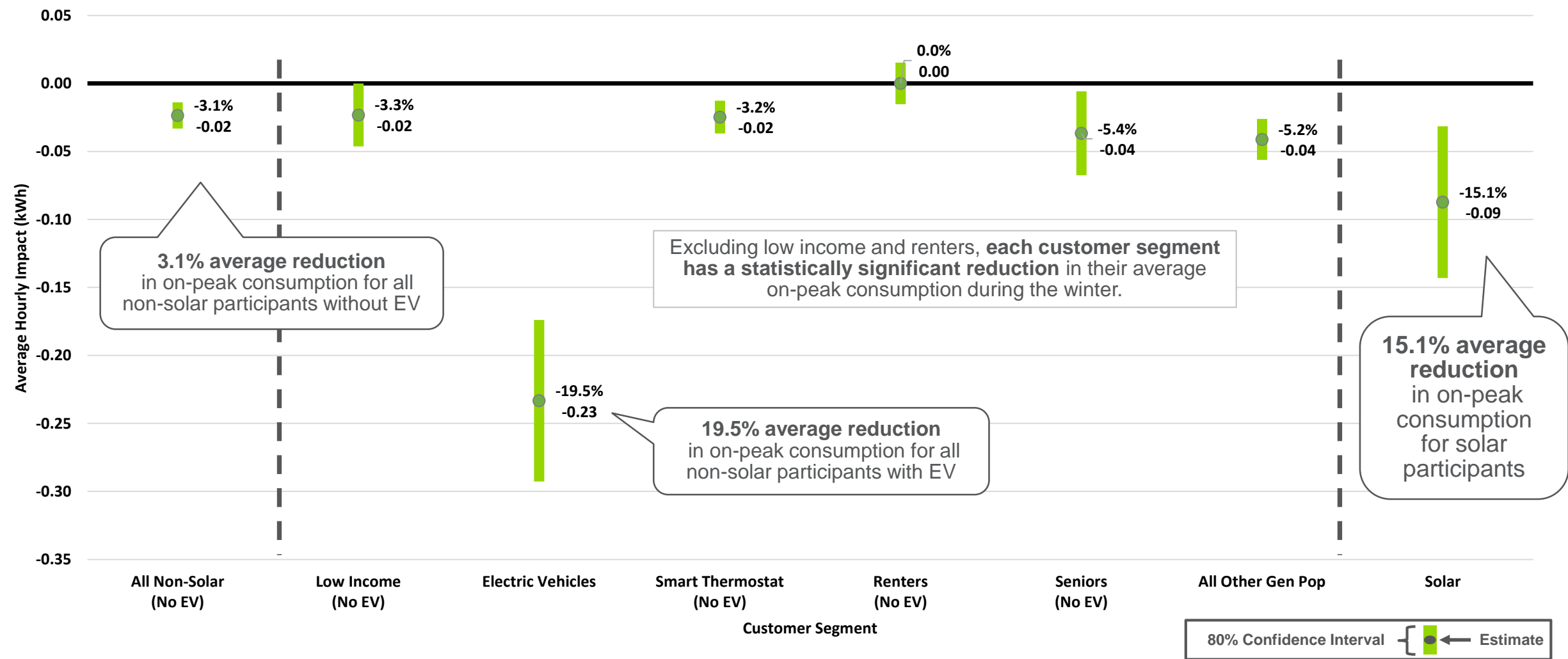
RE-TOU Evaluation Year Participation (Including Overlap)



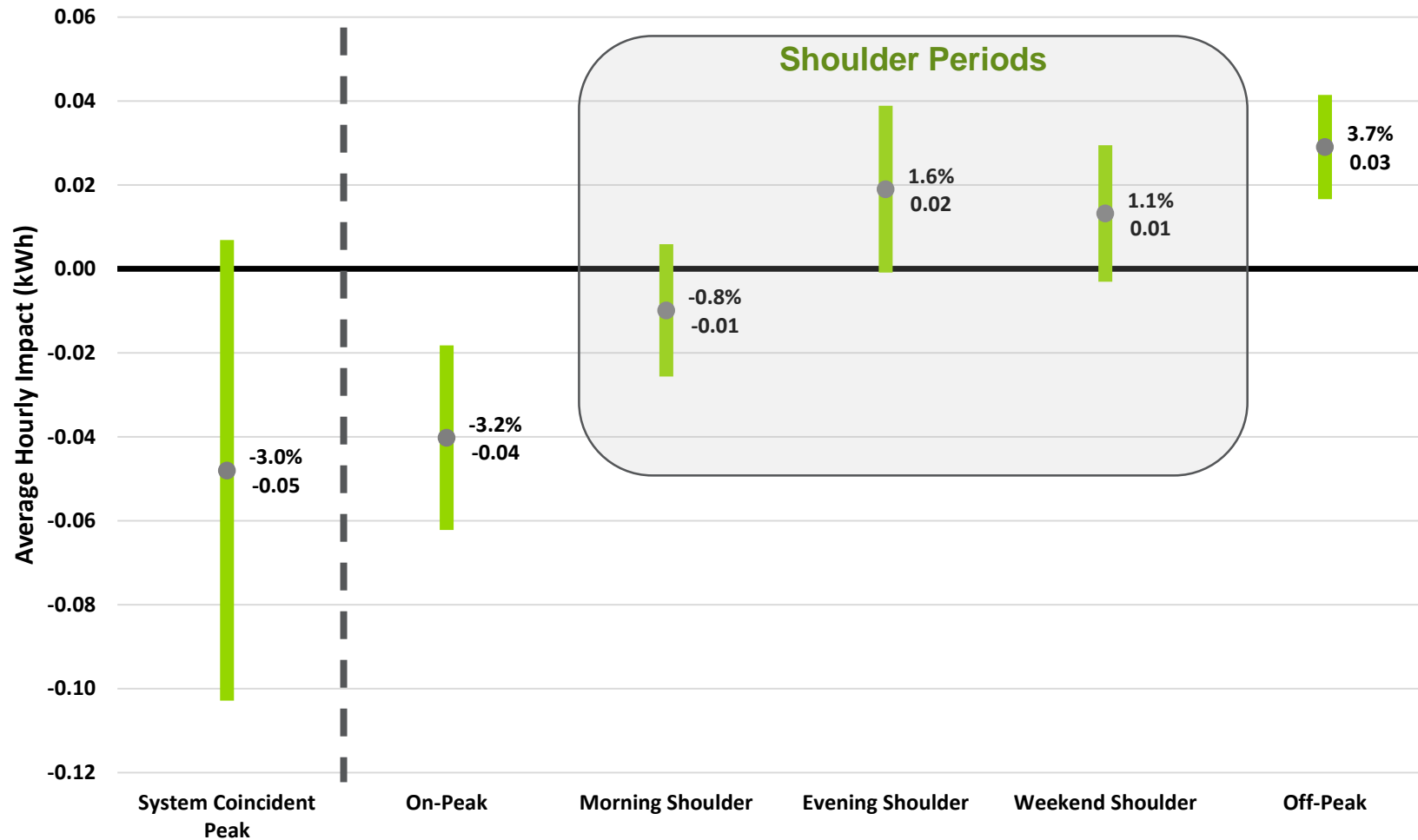
SUMMER RE-TOU ON-PEAK IMPACTS BY CUSTOMER SEGMENT



RE-TOU ON-PEAK CONSUMPTION IMPACTS – WINTER



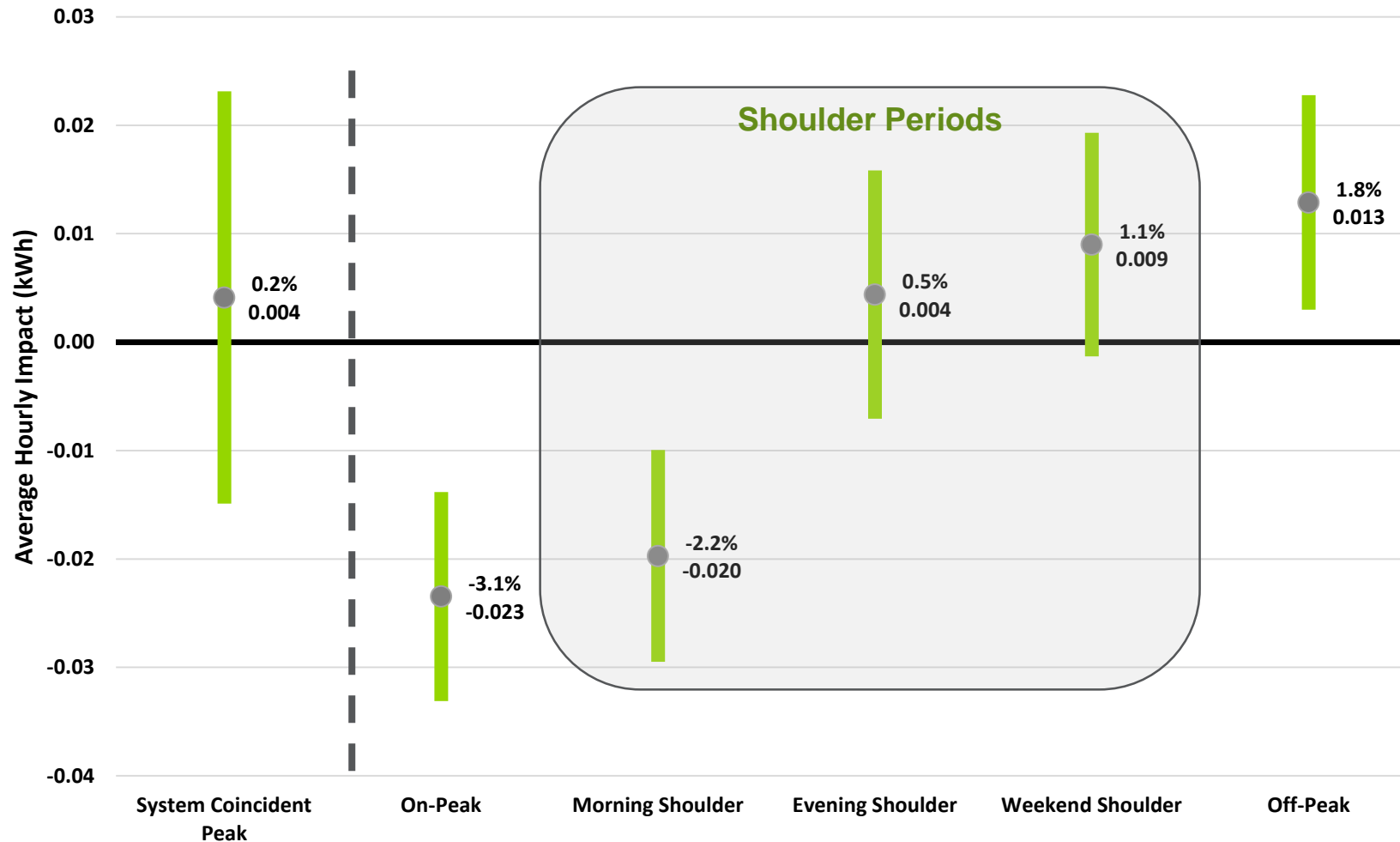
RE-TOU ENERGY IMPACTS – ALL NON-SOLAR (NO EV) – SUMMER



- Participants are reducing on-peak consumption
- Shoulder consumption impact estimates are not statistically significant, but indicate a decrease in morning hours and an increase in evening and weekend hours
- Participants are increasing off-peak consumption
- For an average Summer month, this results in a 1.2% (8.3 kWh) increase in consumption

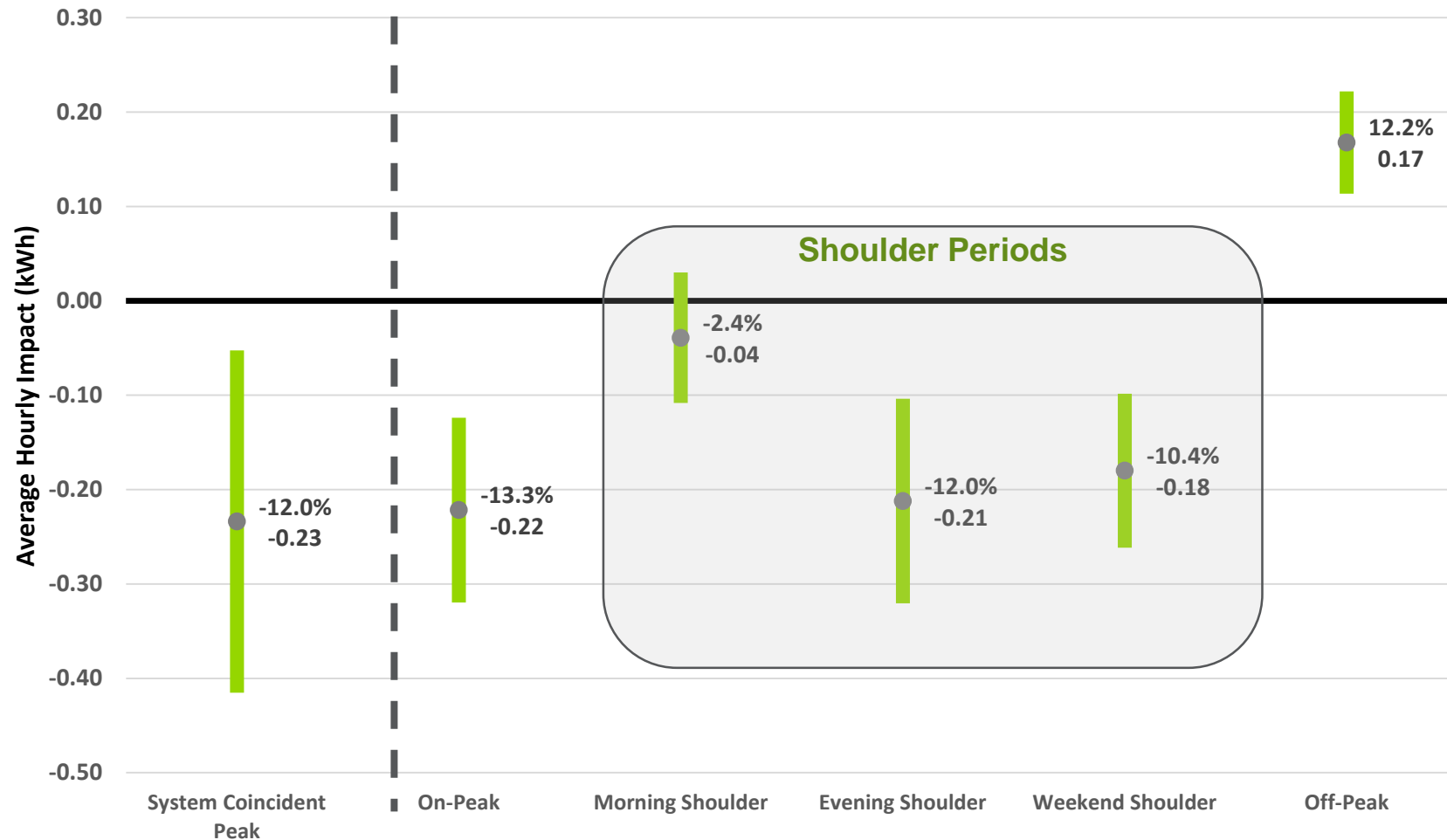
80% Confidence Interval { } Estimate

RE-TOU ENERGY IMPACTS – ALL NON-SOLAR (NO EV) – WINTER



- Participants are reducing on-peak consumption
- Participants are reducing Morning Shoulder consumption and impact estimates indicate an increase in evening and weekend shoulder consumption that is not statistically different than zero
- Participants are increasing off-peak consumption
- For an average Winter month, this results in a 0.3% (1.6 kWh) increase in consumption

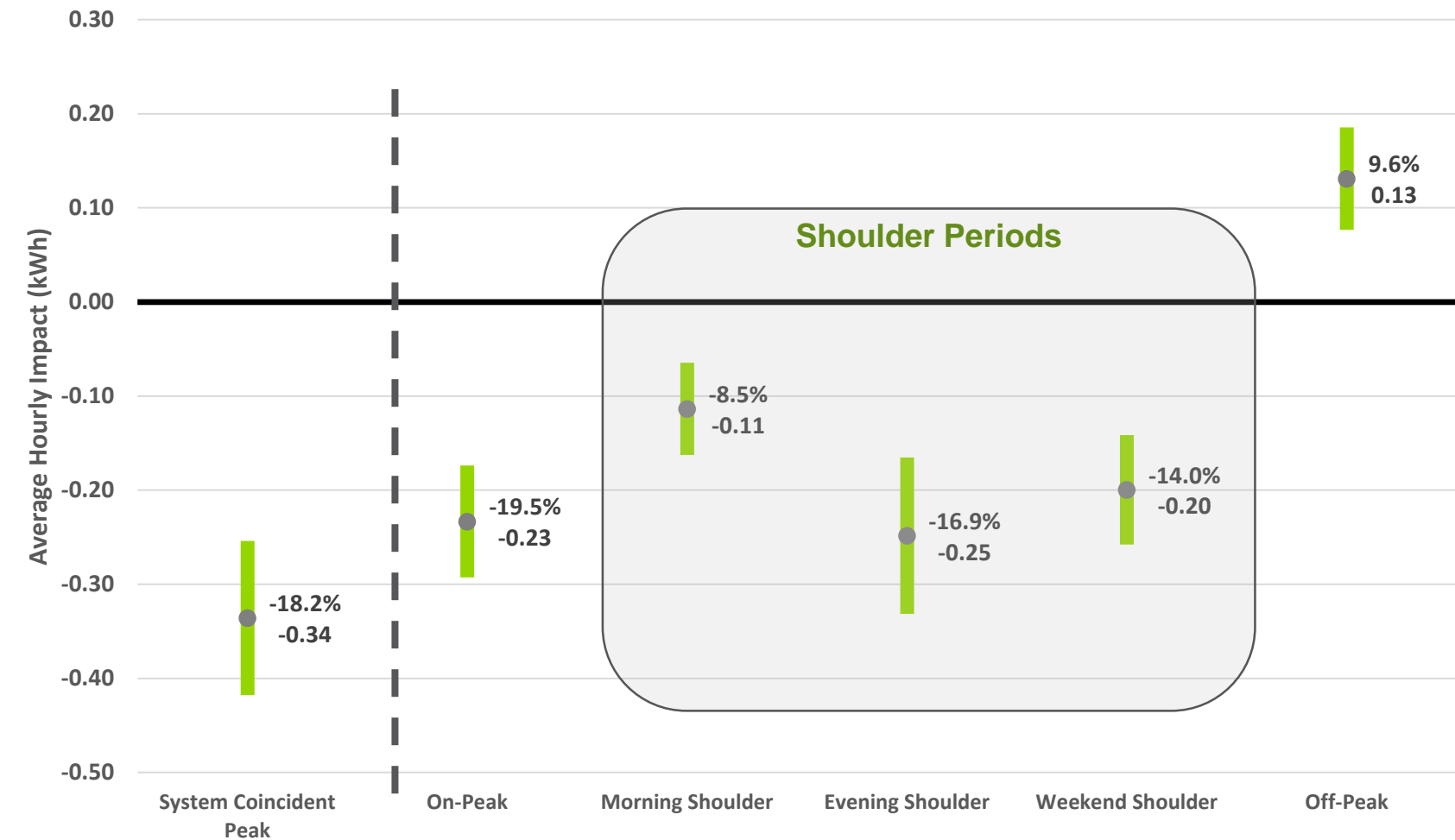
RE-TOU ENERGY IMPACTS – ELECTRIC VEHICLES – SUMMER



- Participants are reducing on-peak, evening shoulder, and weekend shoulder consumption
- Impact estimates indicate an decrease in morning shoulder consumption that is not statistically different than zero
- Participants are increasing off-peak consumption
- For an average Summer month, this results in a 0.5% (5.3 kWh) increase in consumption

80% Confidence Interval { } ← Estimate

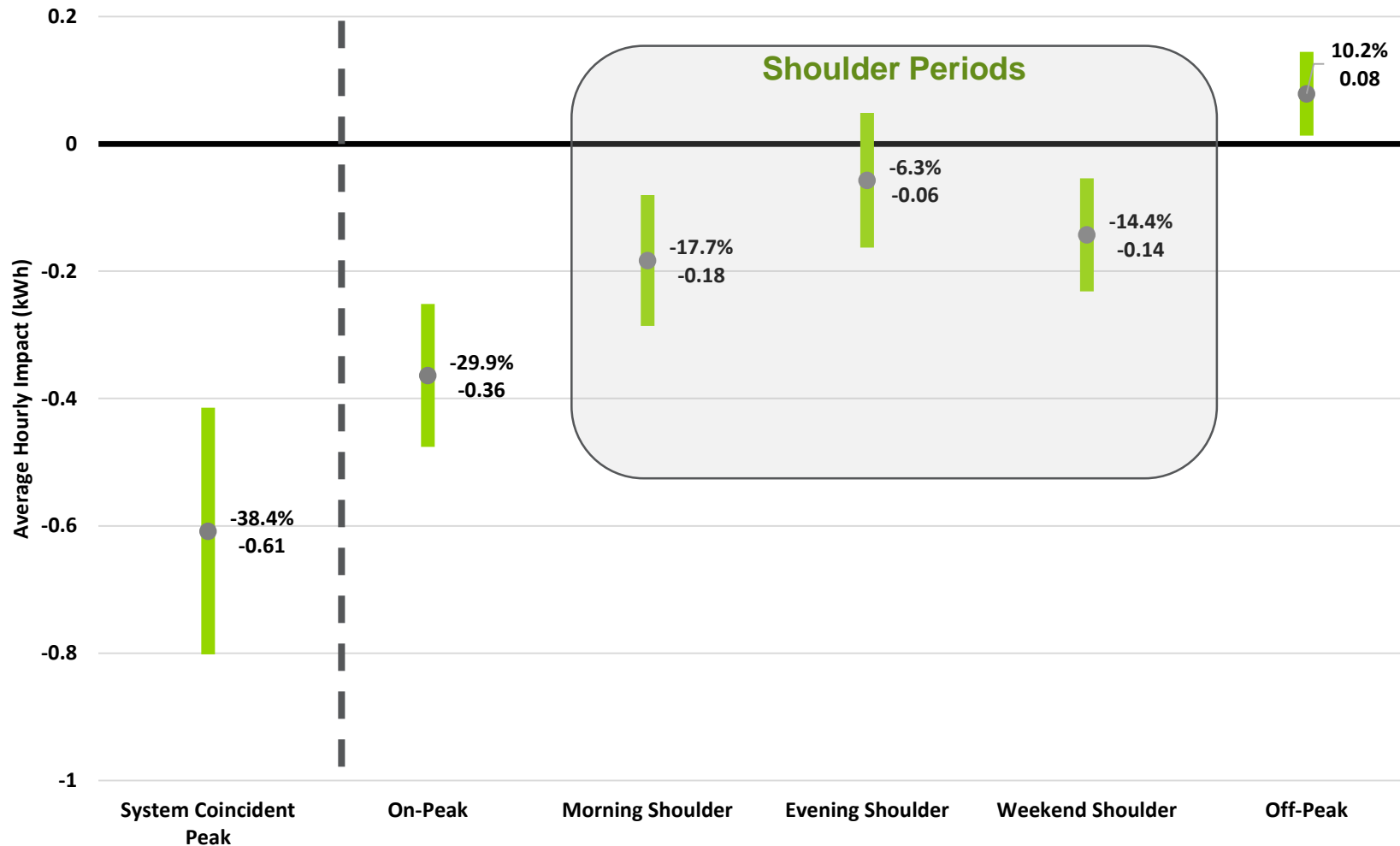
RE-TOU ENERGY IMPACTS – ELECTRIC VEHICLES – WINTER



- Participants are reducing consumption during on-peak and shoulder periods
- Participants are increasing off-peak consumption
- For an average Winter month, this results in a 2.2% (21.4 kWh) decrease in consumption

80% Confidence Interval { ● ← Estimate

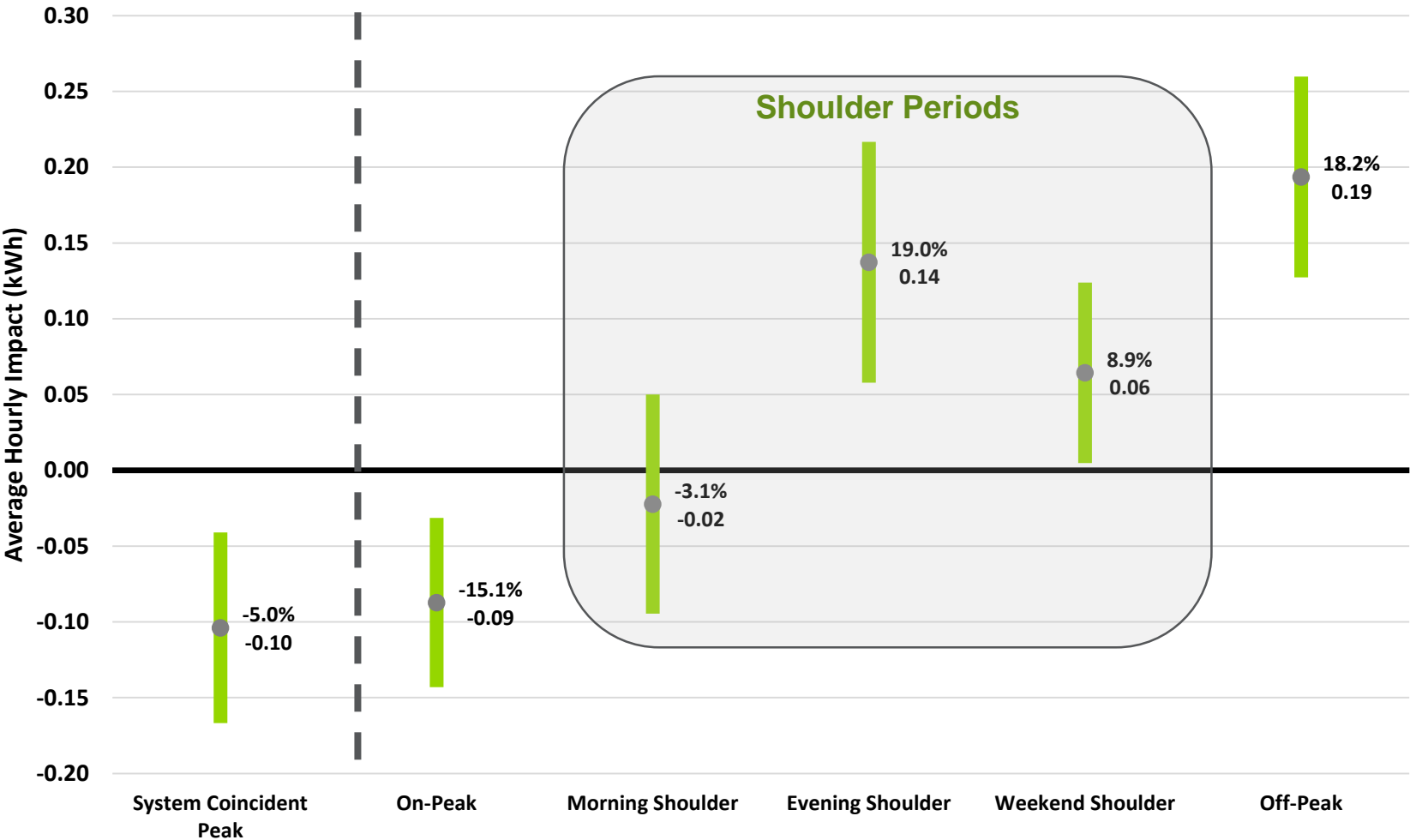
RE-TOU ENERGY IMPACTS – SOLAR – SUMMER



- Participants are reducing gross consumption during on-peak, morning shoulder, and weekend shoulder hours
- Impact estimates indicate an decrease in evening shoulder consumption that is not statistically different than zero
- Participants are increasing off-peak consumption
- For an average Summer month, this results in a 5.7% (41.3 kWh) decrease in gross consumption

80% Confidence Interval {  ← Estimate

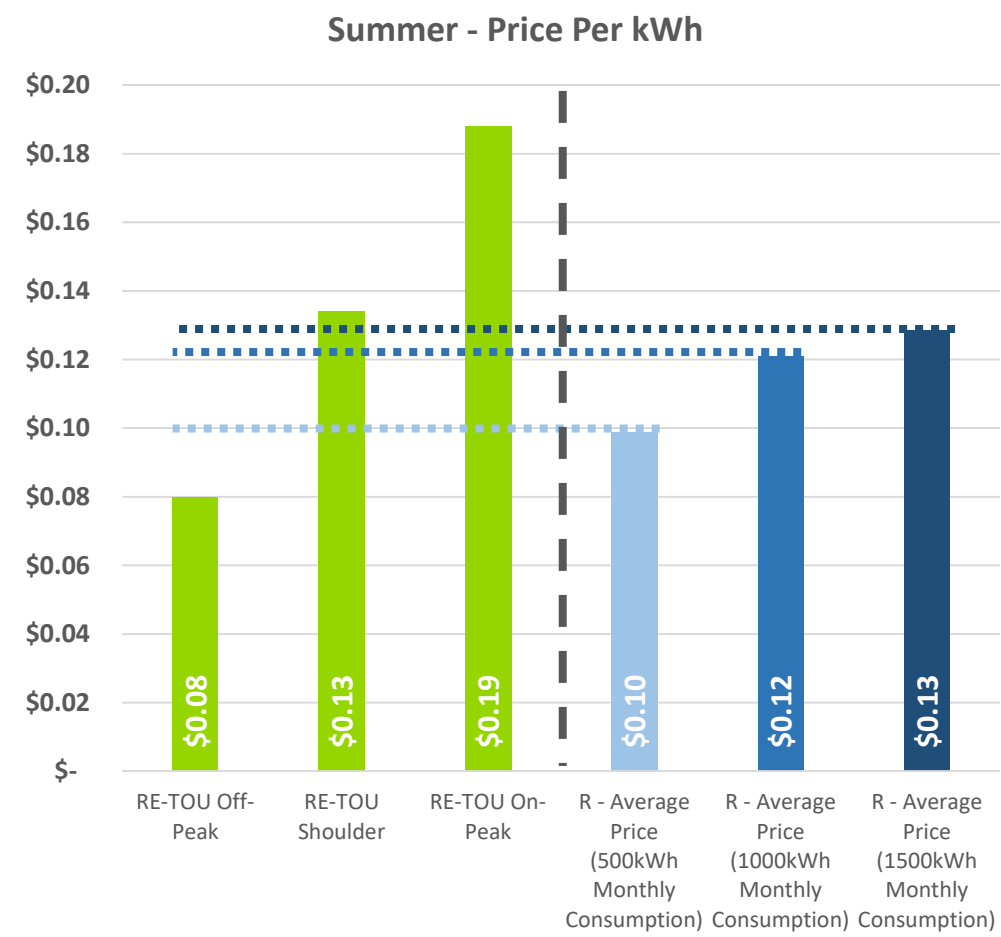
RE-TOU ENERGY IMPACTS – SOLAR – WINTER



- Participants are reducing on-peak consumption
- Participants are reducing Morning Shoulder consumption and impact estimates indicate an increase in evening and weekend shoulder consumption that is not statistically different than zero
- Participants are increasing off-peak consumption
- For an average Winter month, this results in a 13.5% (74.8 kWh) increase in gross consumption

80% Confidence Interval { ● ← Estimate

RE-TOU BILL IMPACTS – TRANSITION FROM R



- Participants are transitioning from an R rate with an **inclining block design**
- During the Summer, consumption up to 500 kWh on the R rate is billed at a lower price (\$0.10/kWh) than consumption over 500 kWh (\$0.14/kWh). This results in a **higher average price per kWh for higher consumption customers on R.**
- High consumption customers are transitioning onto TOU with a higher average price than lower consumption customers – which results in a **greater initial propensity to save money on RE-TOU**
- During the Winter, all consumption is billed at the same price on R and all customers have the same initial propensity to save money.

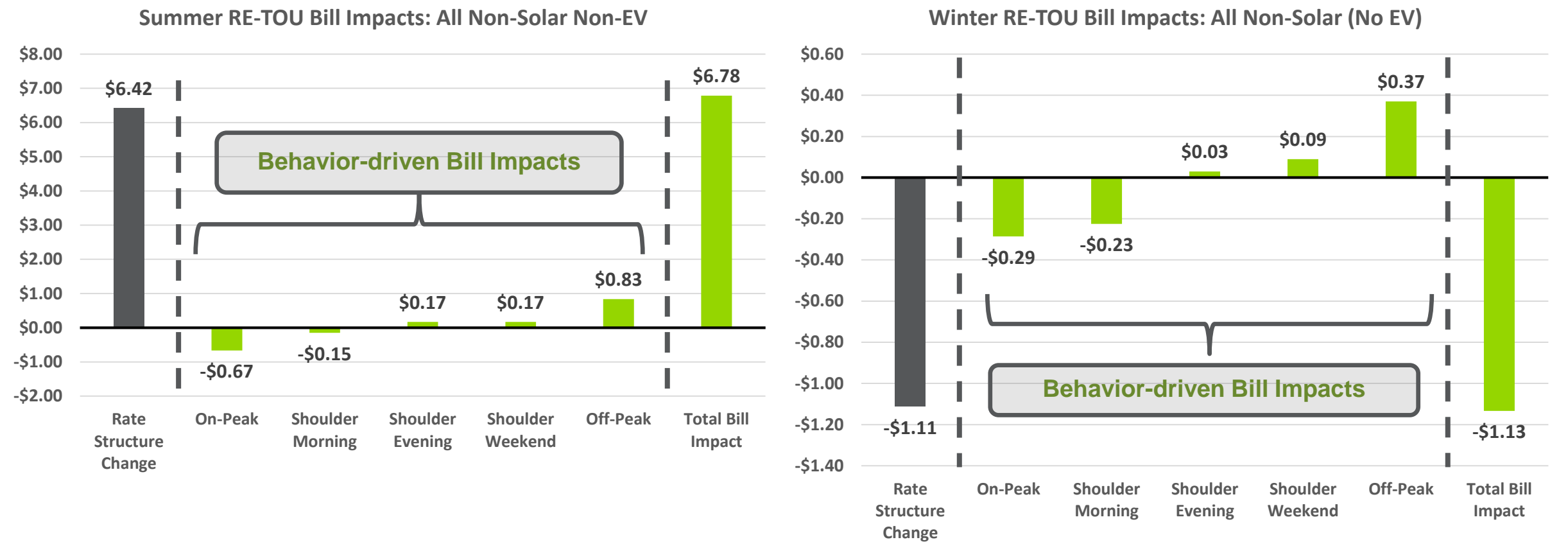
RE-TOU BILL IMPACTS – LIMITATIONS

- Bill impacts are based on the average consumption of participants in the trial and are not the average of individual participant bill impacts. This is due to the behavioral impact estimates being an average across all participants and those impacts do not reflect the exact behavior of any individual participant.
- Bill impacts should not be broadly interpreted as a measure of revenue neutrality since they are calculated with the average consumption of participants and do not represent the cumulative distribution of bill impacts across all participants.
- RE-TOU rate design was based on load research data that differs from the consumption level and load profile of customers that self-selected to participate in the trial. Any potential deviations in revenue neutrality can be attributed to the following differences:

	Xcel Baseline Rate Design Assumptions	Trial Participants	Difference
Annual Avg Monthly Consumption	629.0 kWh	609.9 kWh	-19.0 kWh
Annual Consumption Allocation - Summer	718.5 kWh	707.5 kWh	-11.0 kWh
Annual Consumption Allocation - Winter	584.2 kWh	561.2 kWh	-23.1 kWh
Summer Energy Consumption Allocation by Rate Period			
On-Peak	15.6%	15.5%	-0.05%
Shoulder	44.9%	47.2%	2.3%
Off-Peak	39.5%	37.2%	-2.3%
Winter Energy Consumption Allocation by Rate Period			
On-Peak	11.8%	11.7%	-0.2%
Shoulder	41.9%	44.0%	2.1%
Off-Peak	46.3%	44.3%	-2.0%

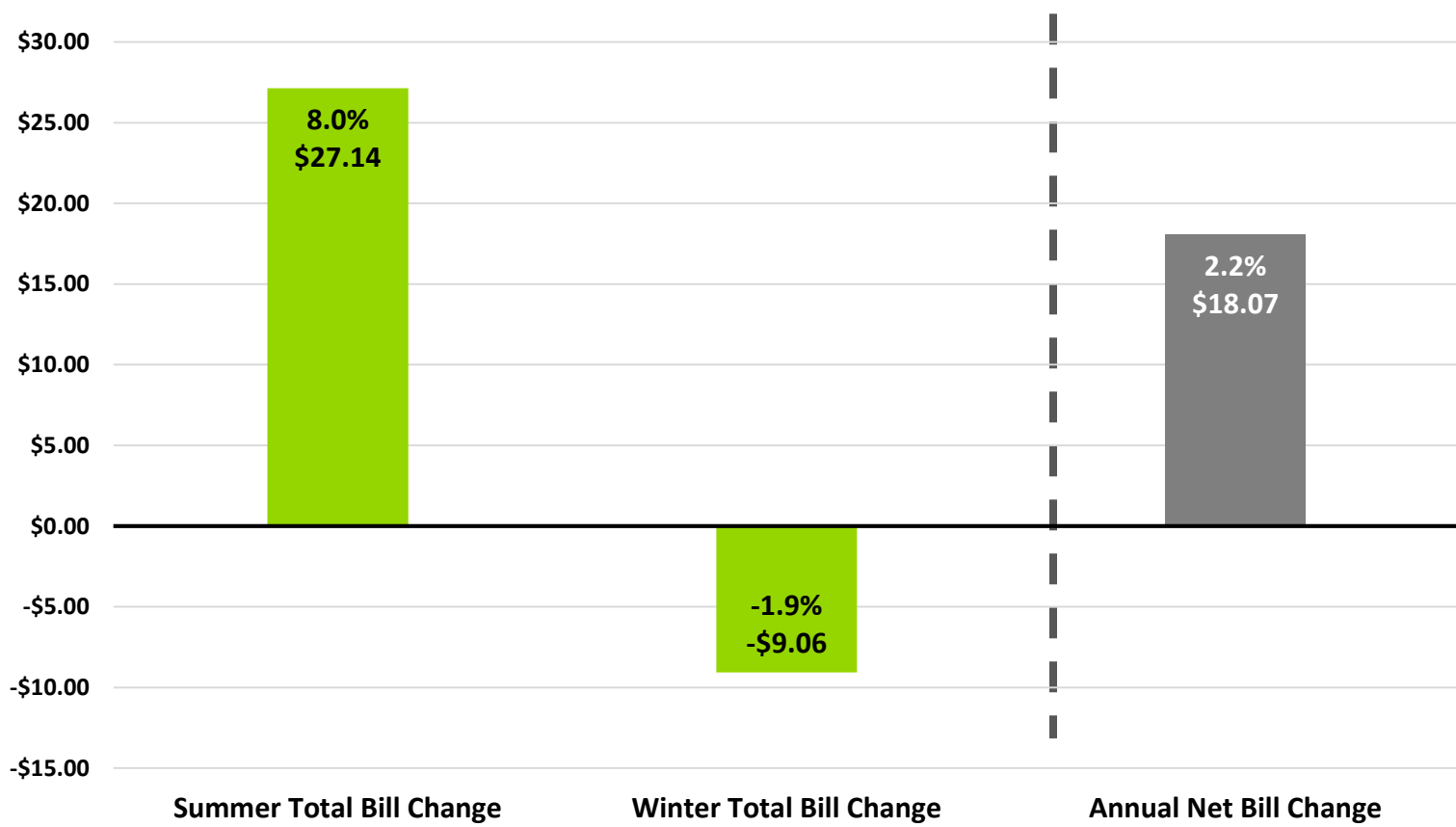
RE-TOU BILL IMPACTS – NON-SOLAR WITHOUT EV

Bill impacts are a function of the changes in rate structure and customer behavior. The net of these effects is the total bill impact.



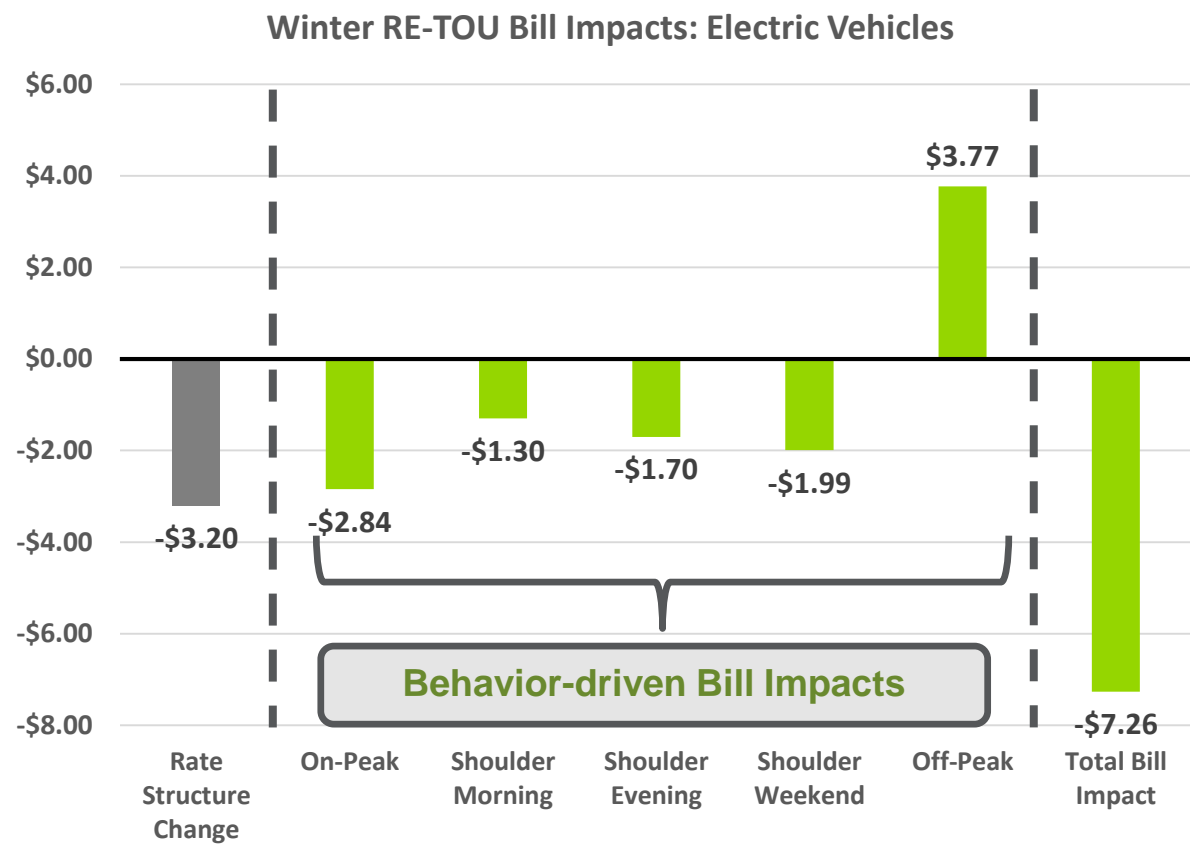
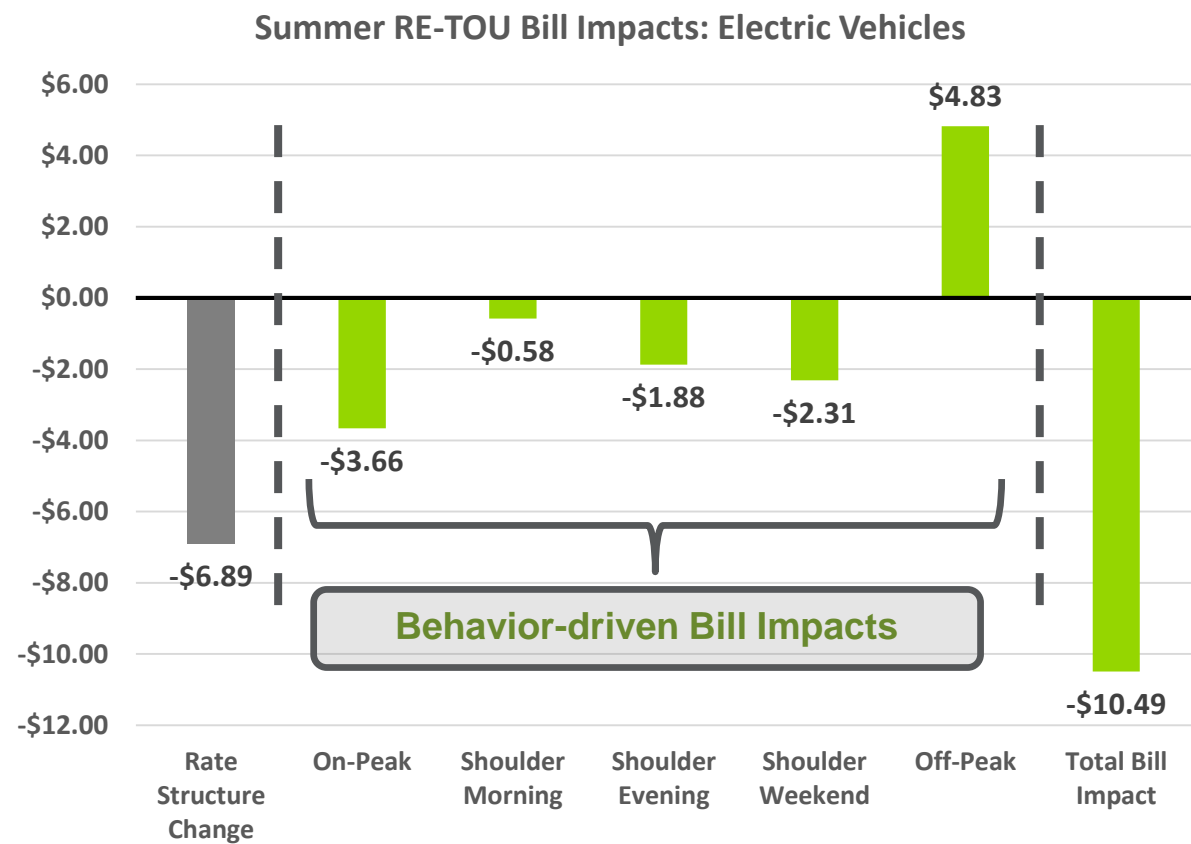
RE-TOU BILL IMPACTS – NON-SOLAR WITHOUT EV

Annualized bill impacts for customers with the average monthly summer (**716 kWh**) and monthly Winter (**563 kWh**) consumption is a 2.2% (\$18.07) increase.



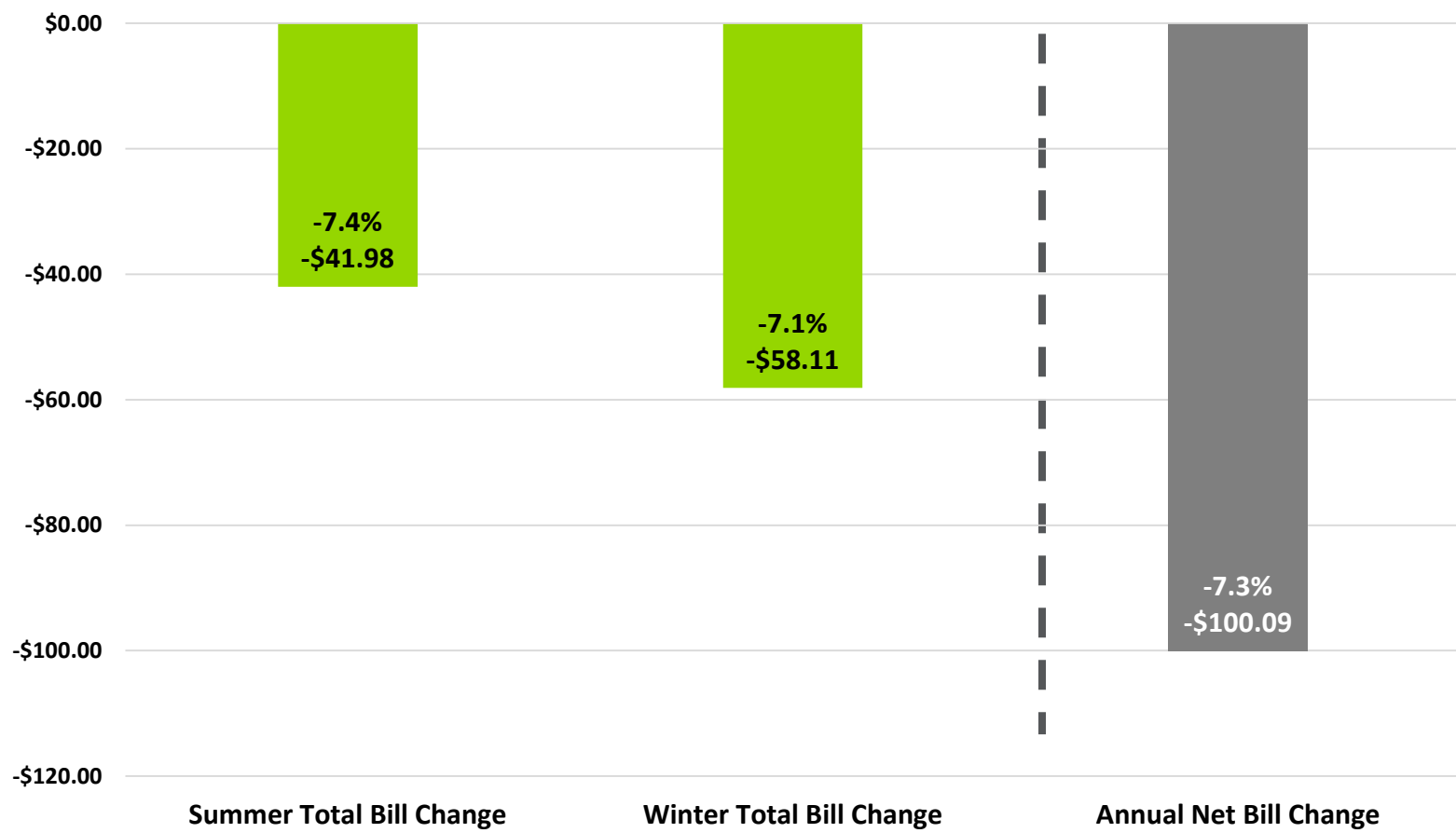
RE-TOU BILL IMPACTS – ELECTRIC VEHICLES

Bill impacts are a function of the changes in rate structure and customer behavior. The net of these effects is the total bill impact.



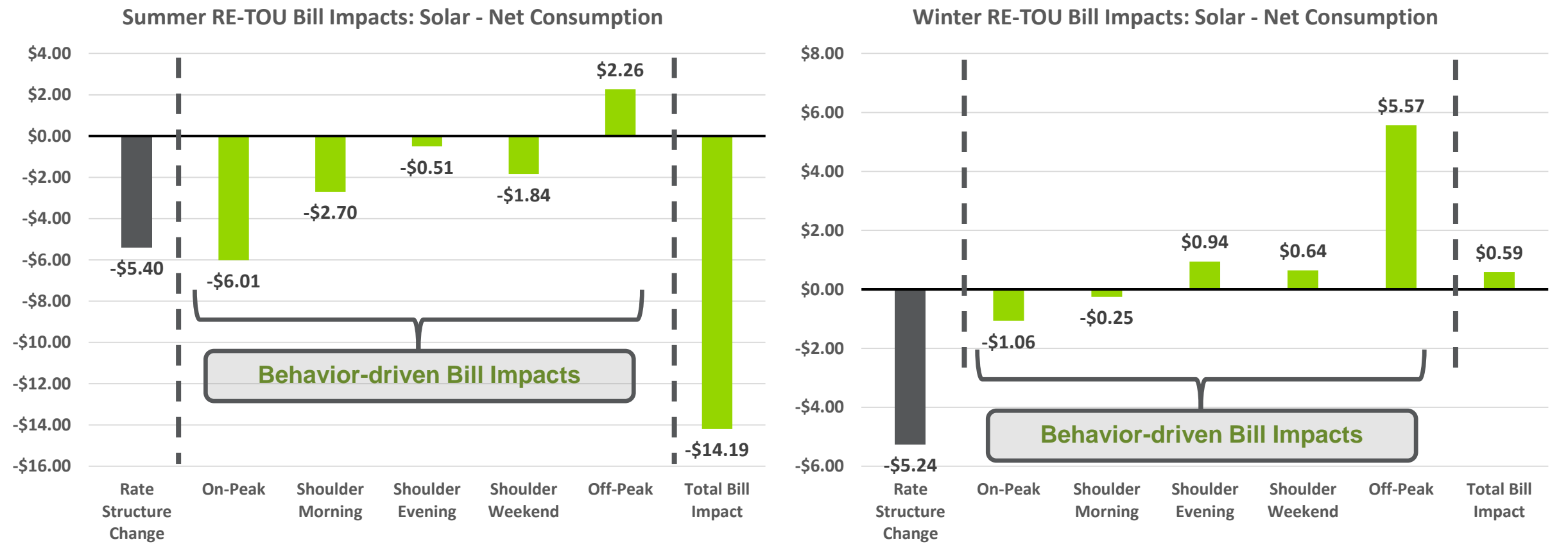
RE-TOU BILL IMPACTS – ELECTRIC VEHICLES

Annualized bill impacts for customers with the average monthly summer (**1101 kWh**) and monthly Winter (**975 kWh**) consumption is a 7.3% (\$100.09) decrease.



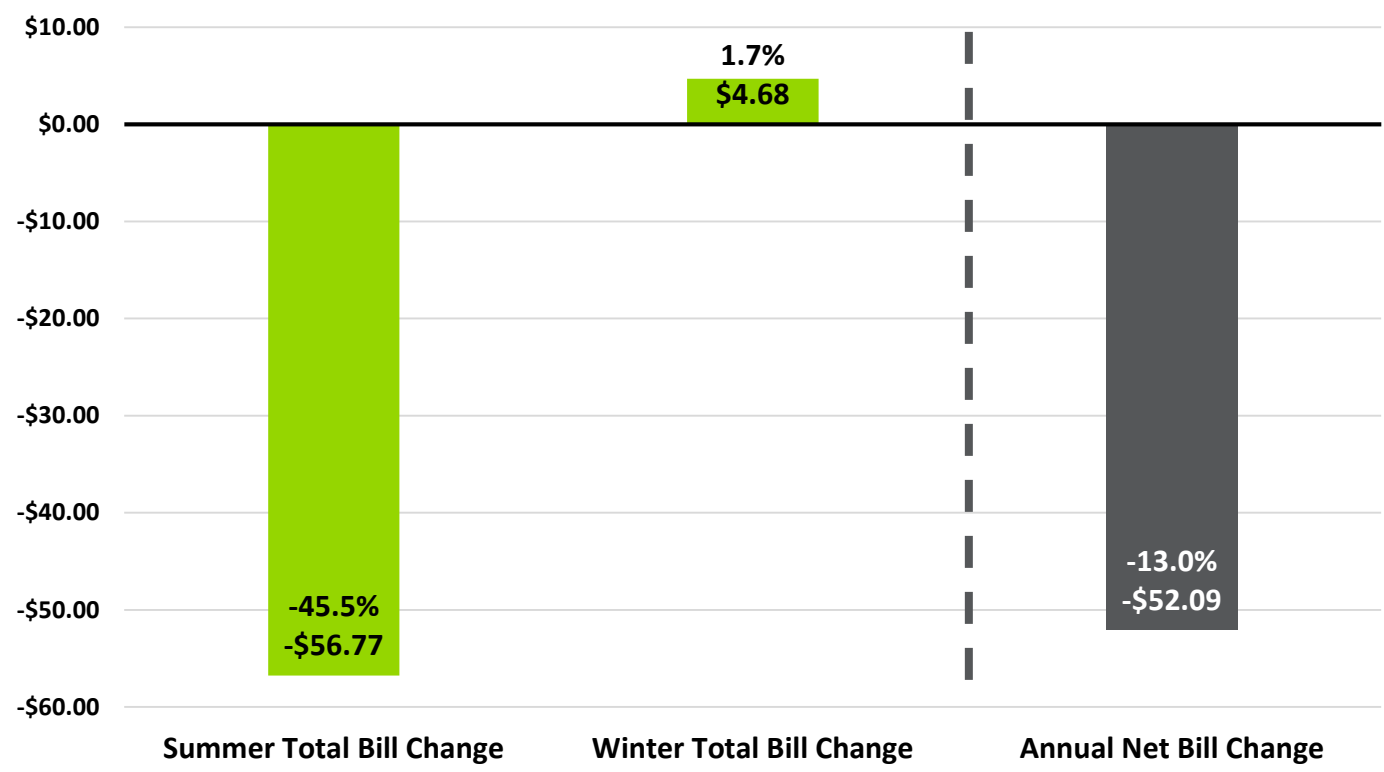
RE-TOU BILL IMPACTS – SOLAR

Bill impacts are a function of the changes in rate structure and customer behavior. The net of these effects is the total bill impact.



RE-TOU BILL IMPACTS – SOLAR

Annualized bill impacts for customers with the average net monthly summer (**261 kWh Net**) and net monthly Winter (**293 kWh Net**) consumption is a \$52.09 decrease or -13.0%.



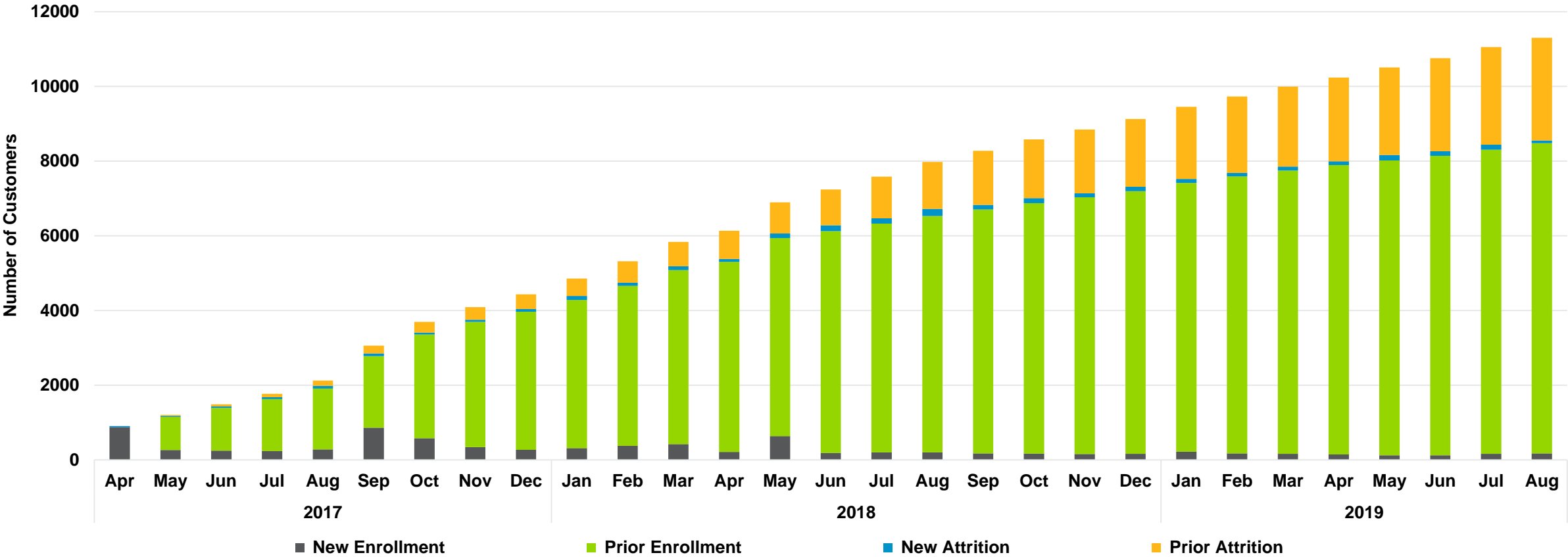
*Net consumption is the customers’ consumption net of solar production that is supplied by Xcel Energy



ENROLLMENT AND ATTRITION

RE-TOU MONTHLY ENROLLMENT AND ATTRITION ANALYSIS

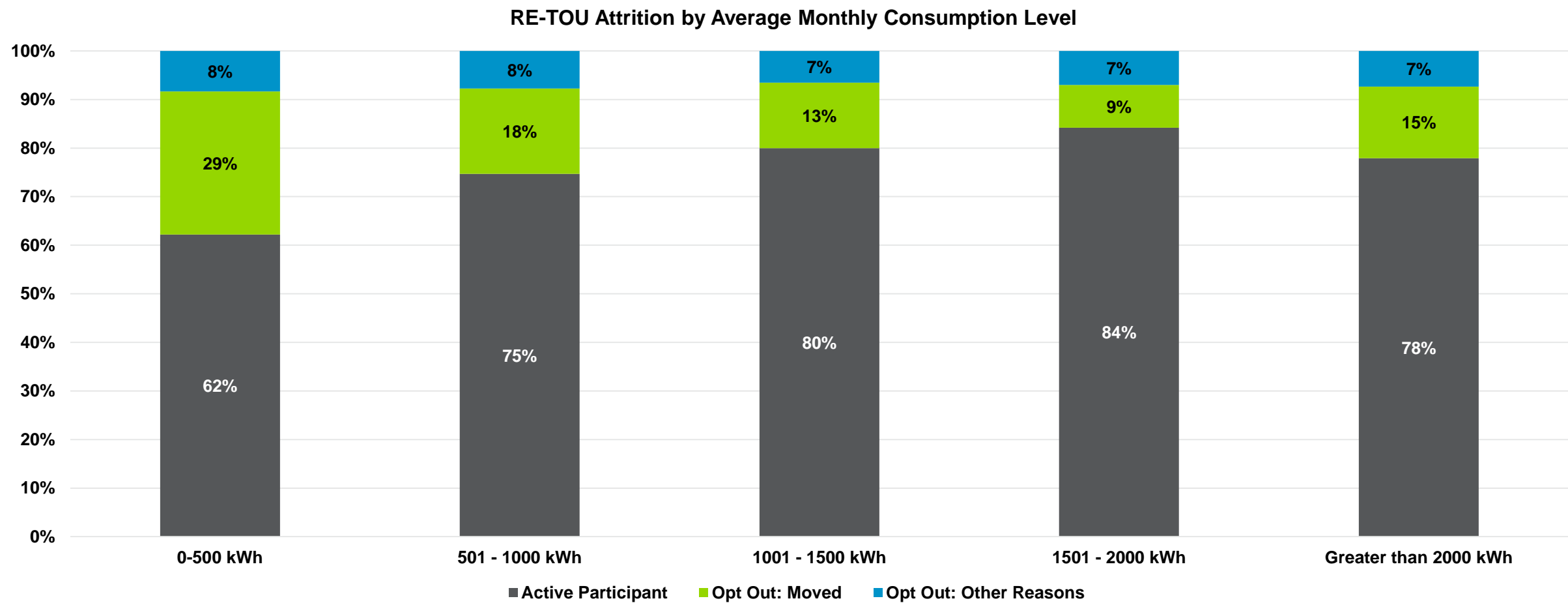
Monthly RE-TOU Participant Enrollment and Attrition



Includes participants and control group customers.

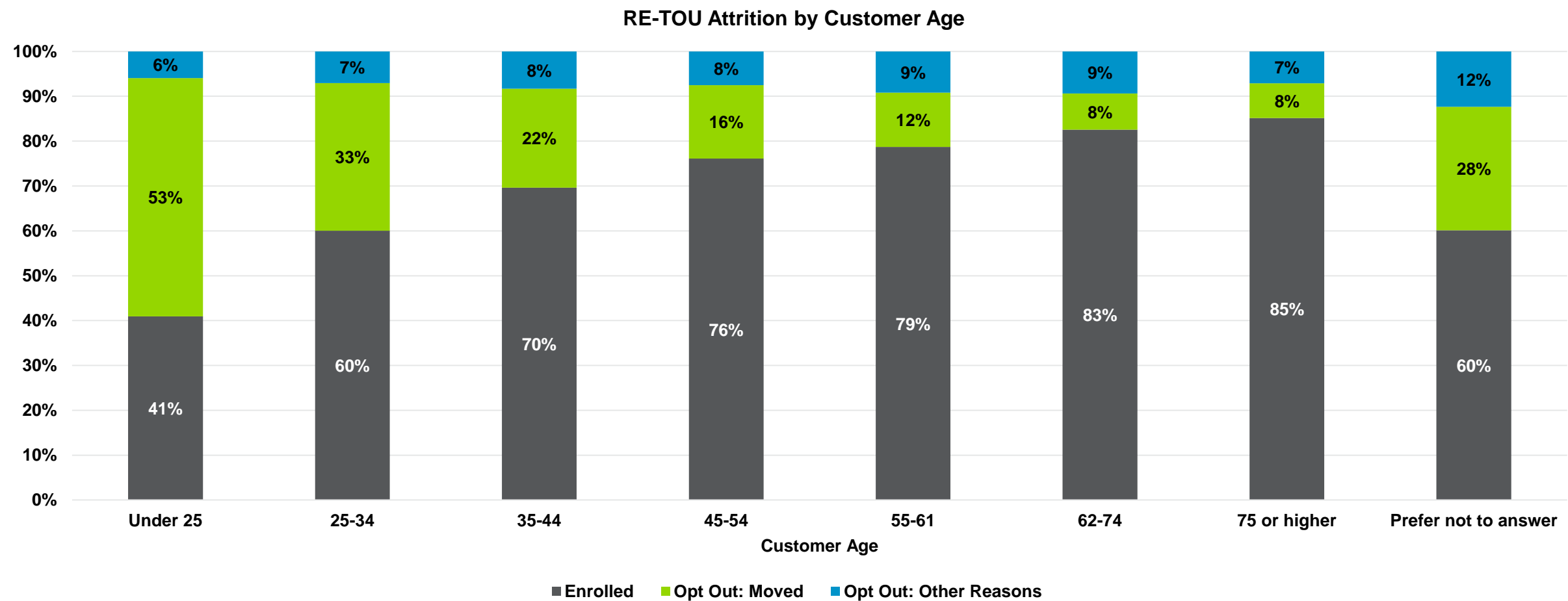
RE-TOU OPT-OUT ANALYSIS

CUSTOMER OPT-OUT PRIMARILY WEIGHTED TOWARDS LOW CONSUMPTION CUSTOMERS



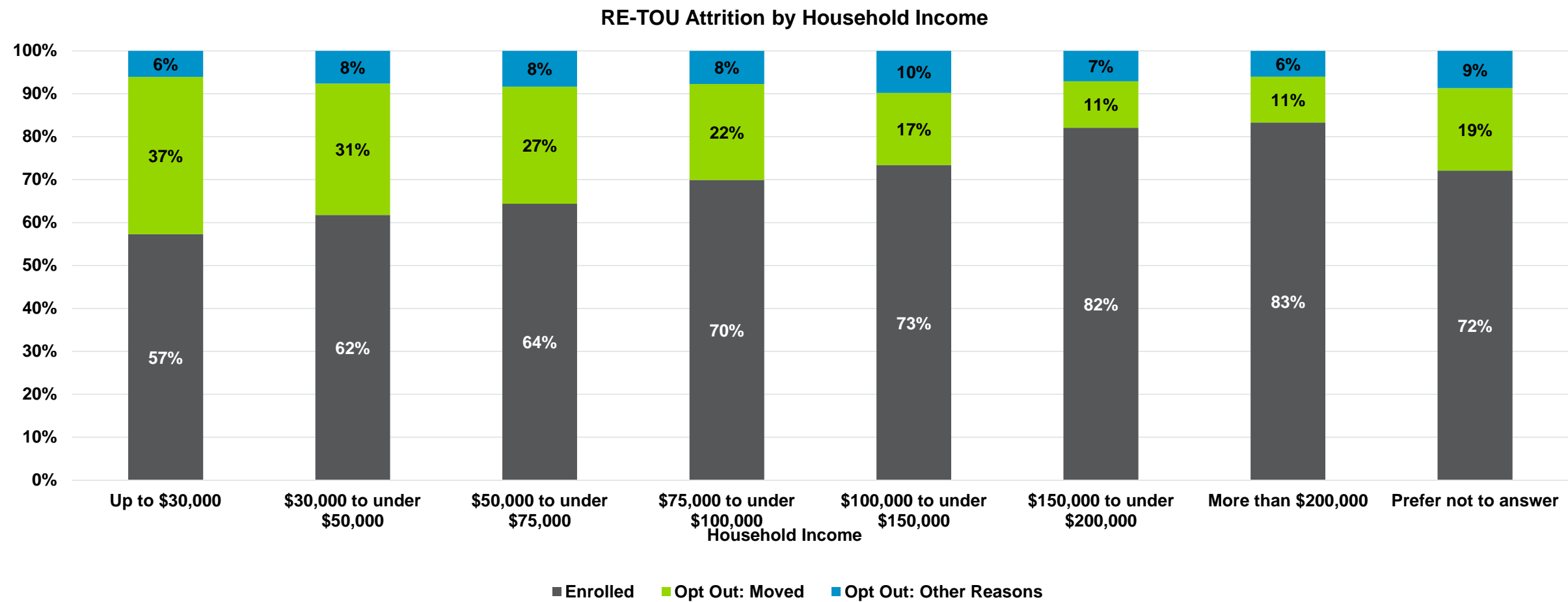
Includes customers at any point during the trial. (April 2017 through July 2019)

RE-TOU MONTHLY ENROLLMENT AND ATTRITION ANALYSIS



Includes customers at any point during the trial. (April 2017 through July 2019)

RE-TOU MONTHLY ENROLLMENT AND ATTRITION ANALYSIS

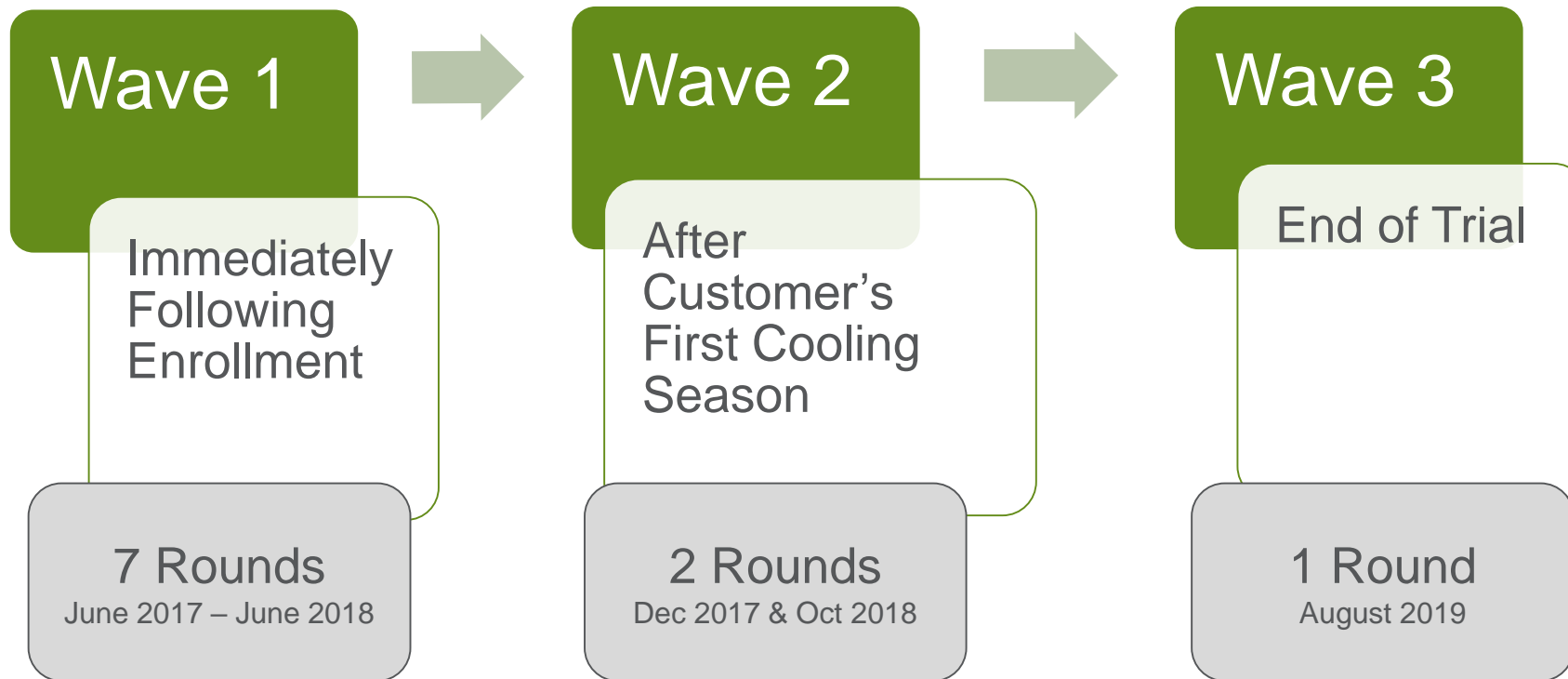


Includes customers at any point during the trial. (April 2017 through July 2019)



CUSTOMER RESEARCH

TOU TRIAL SURVEYS



KEY THEMES AND TAKEAWAYS - TOU

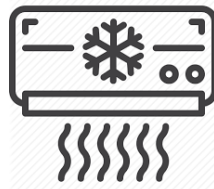
Most customers are feeling comfortable / satisfied with the rate plan.

- Most customers (86%) report at least a basic understanding of the bill.
- Most customers report that the rate plan has helped them gain more control over their bill (74%), conserve energy (70%) and save money (68%).
- More customers have smart & programmable thermostats, PEVs, and solar.
 - A consistently large (84%) proportion of customers are likely to recommend the rate plan to friends and family.

Customer engagement is high but high-impact behaviors aren't prioritized.

- Most customers are taking action to reduce peak energy use (93%).
- Only a small percentage appear to be shifting AC use or making notable changes to thermostat settings.

Opportunity → Enhanced understanding of customer barriers to shifting AC use practices during peak.



Customers value frequent and diverse communications.

- One-quarter of customers would like more frequent communications.
- Information provided via email and MyAccount is most popular but stickers (prompts) and website are highly valued by some customers.

Opportunity → More targeted and tailored communications approaches may enhance customer engagement and possibly reduce peak period consumption.

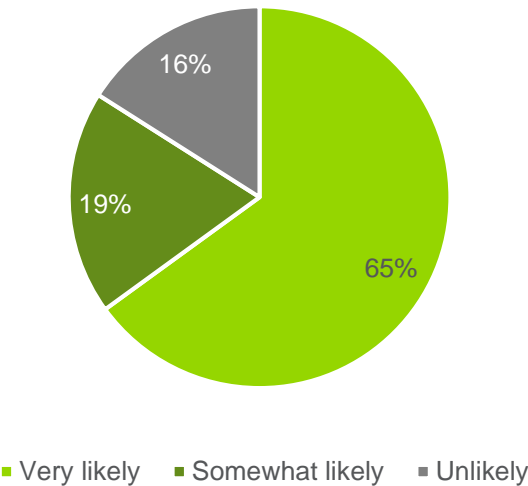
WAVE 3 SUMMARY FINDINGS - TOU

Satisfaction & Perceptions	<p>Satisfaction is high. 84% of customers are likely to recommend the TOU rate to family/friends and 65% indicated a high likelihood to recommend.</p> <p>Perceptions are positive. Most customers report bills are in line with or lower than expected (68%) and that they have more control over their bill (74%).</p>
Information & Communications	<p>Electronic communications favored by most but no one-size-fits-all approach. Customers are most likely to use information resources provided MyAccount (84%) and via email (81%) and least likely to find the Call Center a helpful source of information (57%). Stickers & website highly valued by subset of customers.</p>
Customer Knowledge	<p>Customer knowledge appears to increase with experience. A large majority of customers (86%) report at least a basic understanding of the bill while the proportion of customers with a “fairly complete” or “complete” understanding has increased from 34% in Wave 1 to 49% in Wave 3.</p>
Engagement & Behaviors	<p>Customers’ behavioral responses leave opportunities for enhanced savings. Most customers are shifting appliance use (93%), some are turning off their AC during peak (26%) or changing thermostat settings (12%); however the difference in average reported temperature during peak and shoulder is <1 degree.</p>
Thermostats & PEVs	<p>Customers increasingly embracing technologies. End of trial findings show a larger proportion of customers have a smart or programmable thermostat (70%), a plug-in electric vehicle (16%), or solar panels (20%) as compared to the post-enrollment period.</p>

WAVE 3: CUSTOMER SATISFACTION, PERCEPTIONS, AND EXPECTATIONS

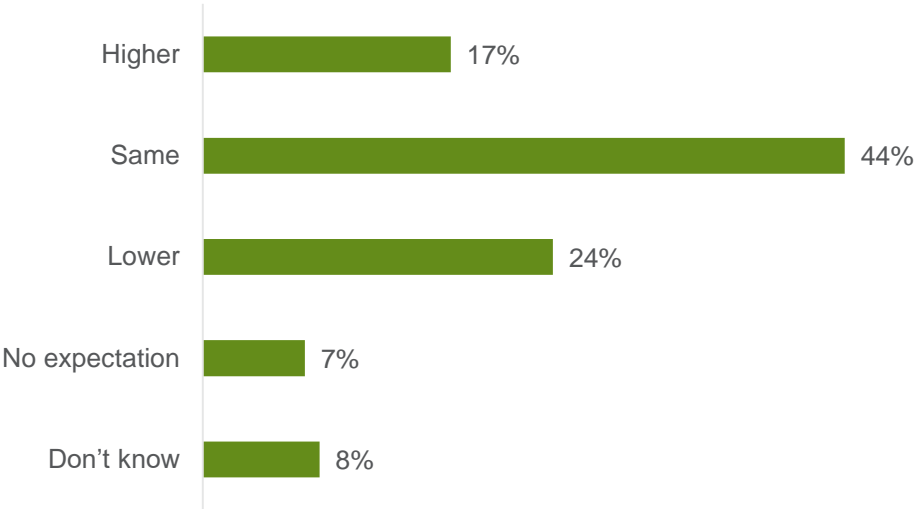
- 84% of respondents indicate they would recommend the plan to friends and family.
- Most respondents say their bills have been the same or lower than they expected.

Likelihood of recommending the plan to friends and family? (n=1894)



Q9 On a scale of 0 to 10, where 10 is “extremely likely” and 0 is “not at all likely”, how likely are you to recommend the TOU pricing plan to friends or family?

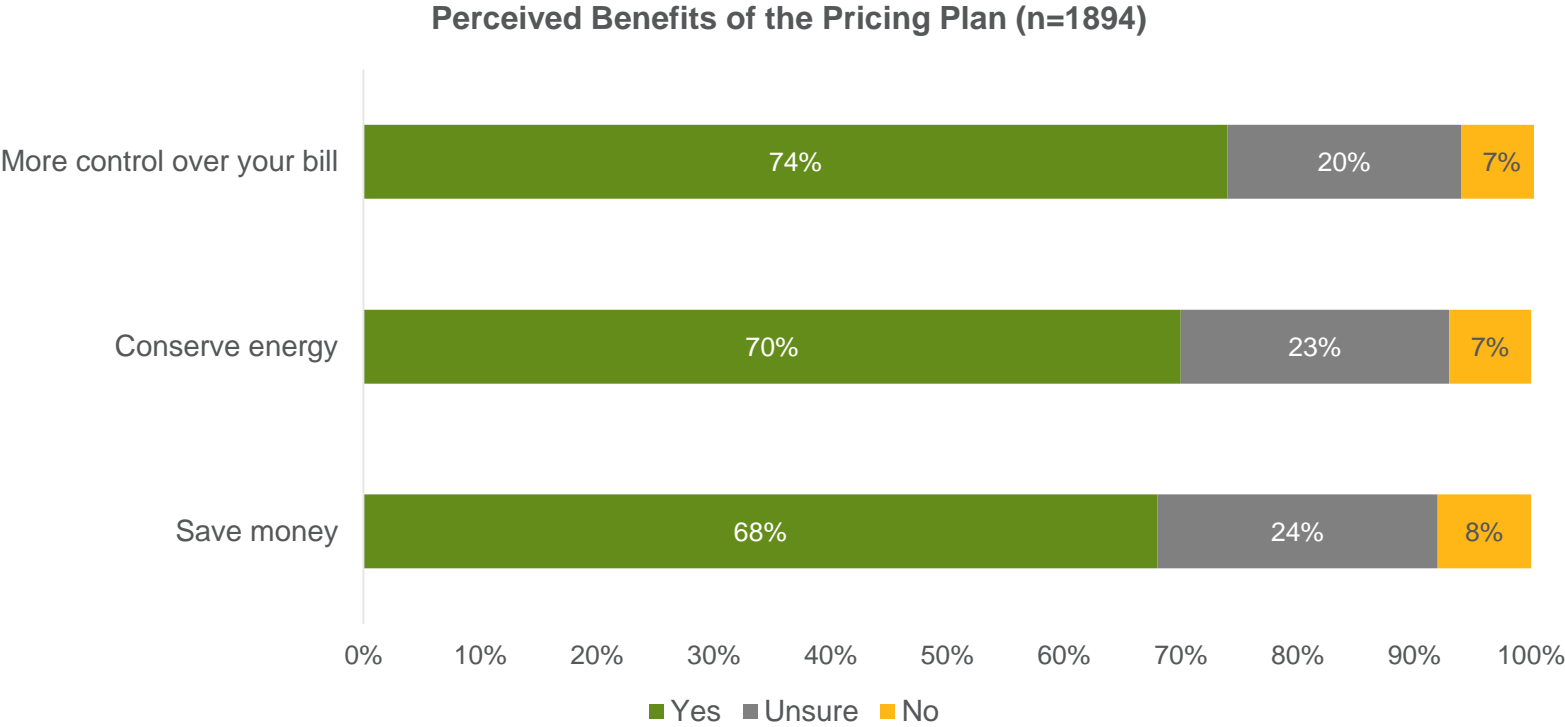
Bill expectations since enrolling in pricing plan (n=1889)



Q7 To what degree has your experience with the TOU pricing plan been what you expected?

WAVE 3: CUSTOMER SATISFACTION, PERCEPTIONS, AND EXPECTATIONS

- Most respondents believe that the plan has given them more control, and helped conserve energy and save money on their bill.



Q10b Has your participation in the [TOU](#) pricing plan helped you achieve more control over your electricity bill?

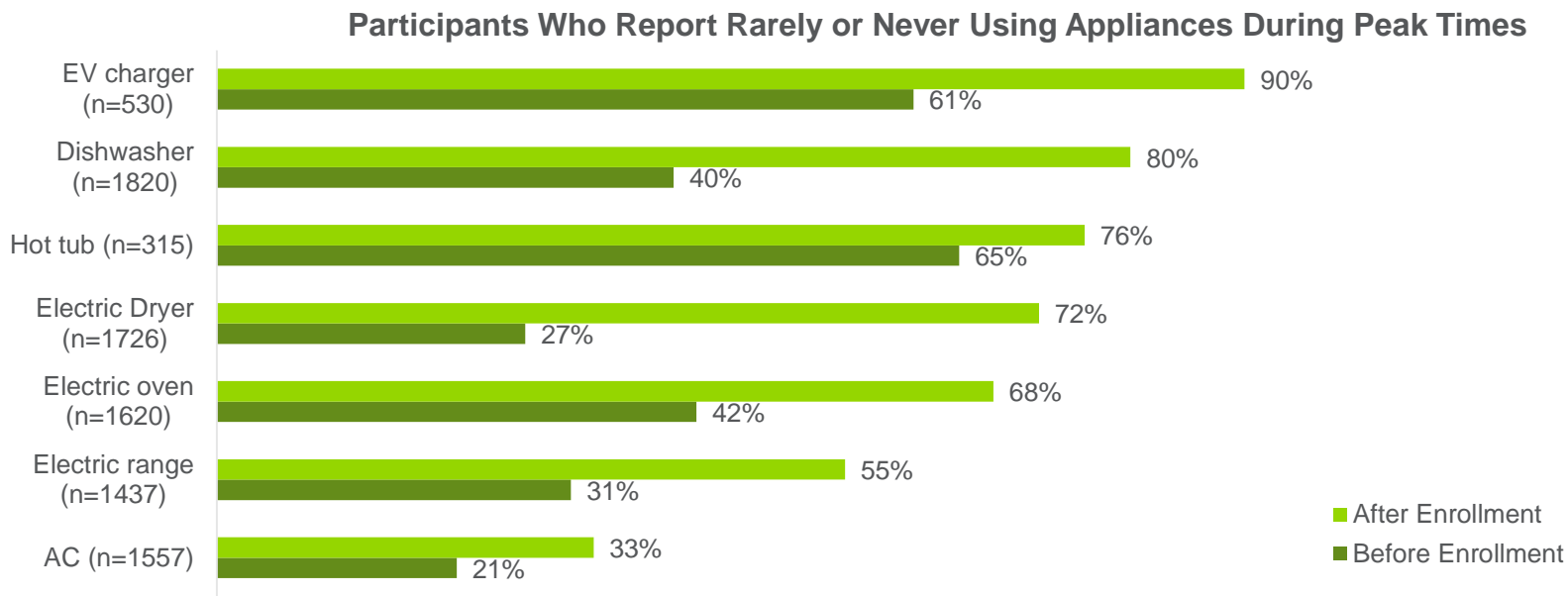
Q10c Has your participation in the [TOU](#) pricing plan helped you conserve energy?

Q10d Has your participation on the [TOU](#) pricing plan helped you save money on your electricity bill?

WAVE 3: CUSTOMER ENGAGEMENT AND BEHAVIOR

Appliance Use

- Customers report a large reduction in appliance use during peak, especially kitchen appliances and dryers.
- One-third of customers with AC avoid using AC during peak.
- EV charging shifted notably with 90% of participants rarely charging during peak

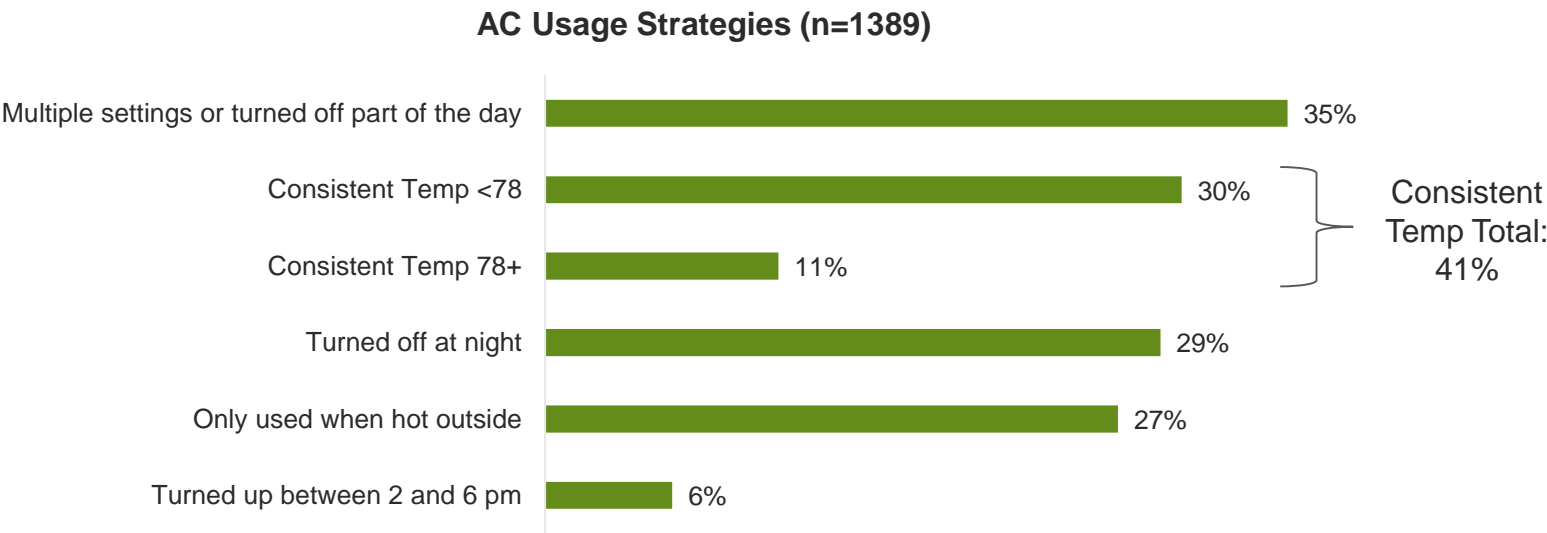


Q12 & Q14 **Before/After** signing up for the TOU pricing plan, how frequently did you run the following appliances during the hours of 2pm to 6pm during the summer months (June – Sept)?

WAVE 3: CUSTOMER ENGAGEMENT AND BEHAVIOR

Air Conditioning Use Strategies

- Wave 3 results show that customer use of AC varies across households:
 - Setting a constant temperature (41%)
 - Using multiple temperatures (35%)
 - Only using AC when it is really hot outside (27%)
 - Turning off at night (29%)

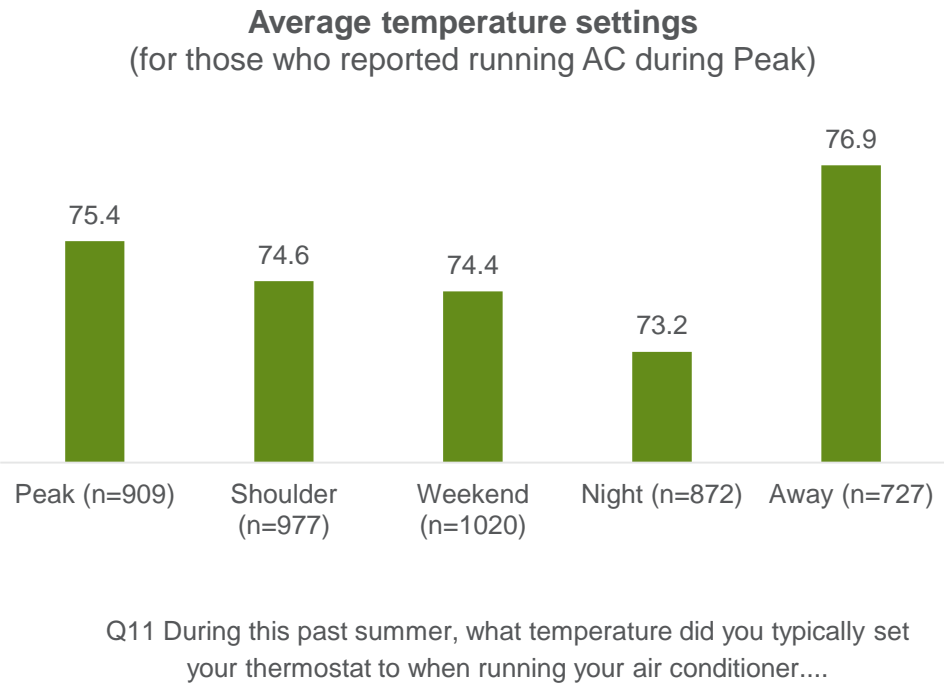
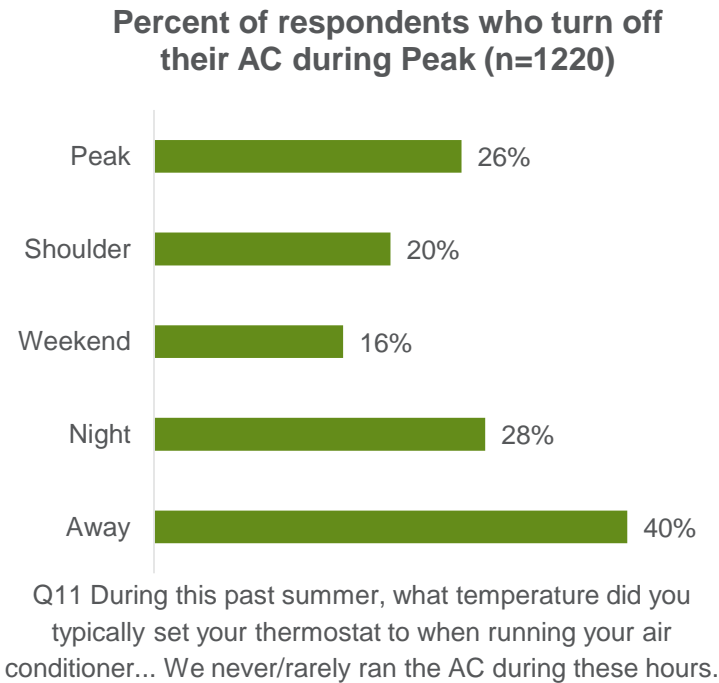


Q15 After enrolling in the TOU pricing plan, how would you describe the typical air conditioning settings in your home during the summer months (June-Sept)? *Please select all that apply:*

WAVE 3: CUSTOMER ENGAGEMENT AND BEHAVIOR

AC Temperature Settings:

- Customer with AC are turning it off during peak (26%), shoulder (20%) periods and when away (40%).
- For customers who run AC during peak and shoulder, average peak settings are approximately 1 degree warmer than during shoulder.
- Customers report slightly **lower** temperature settings at night (73) and slightly **higher** when away (77).

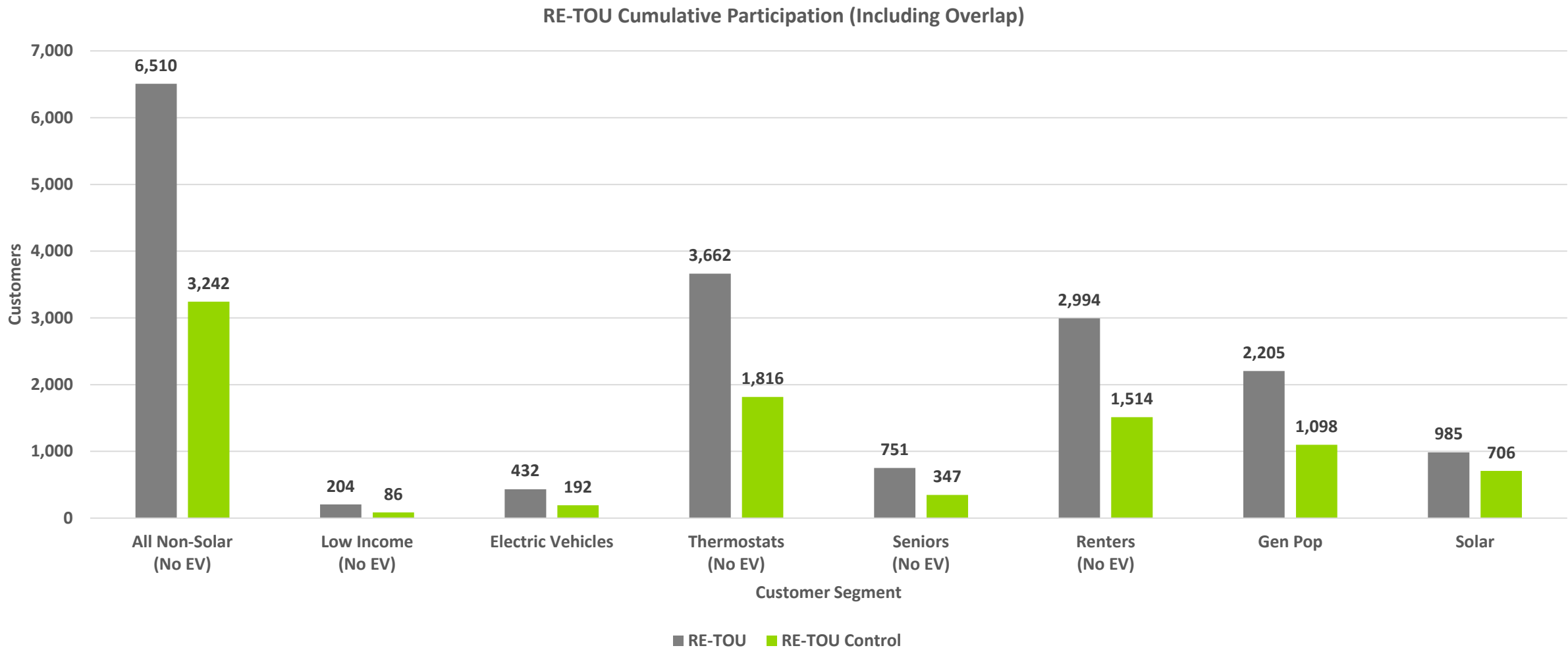




APPENDIX

RE-TOU SAMPLE SIZE

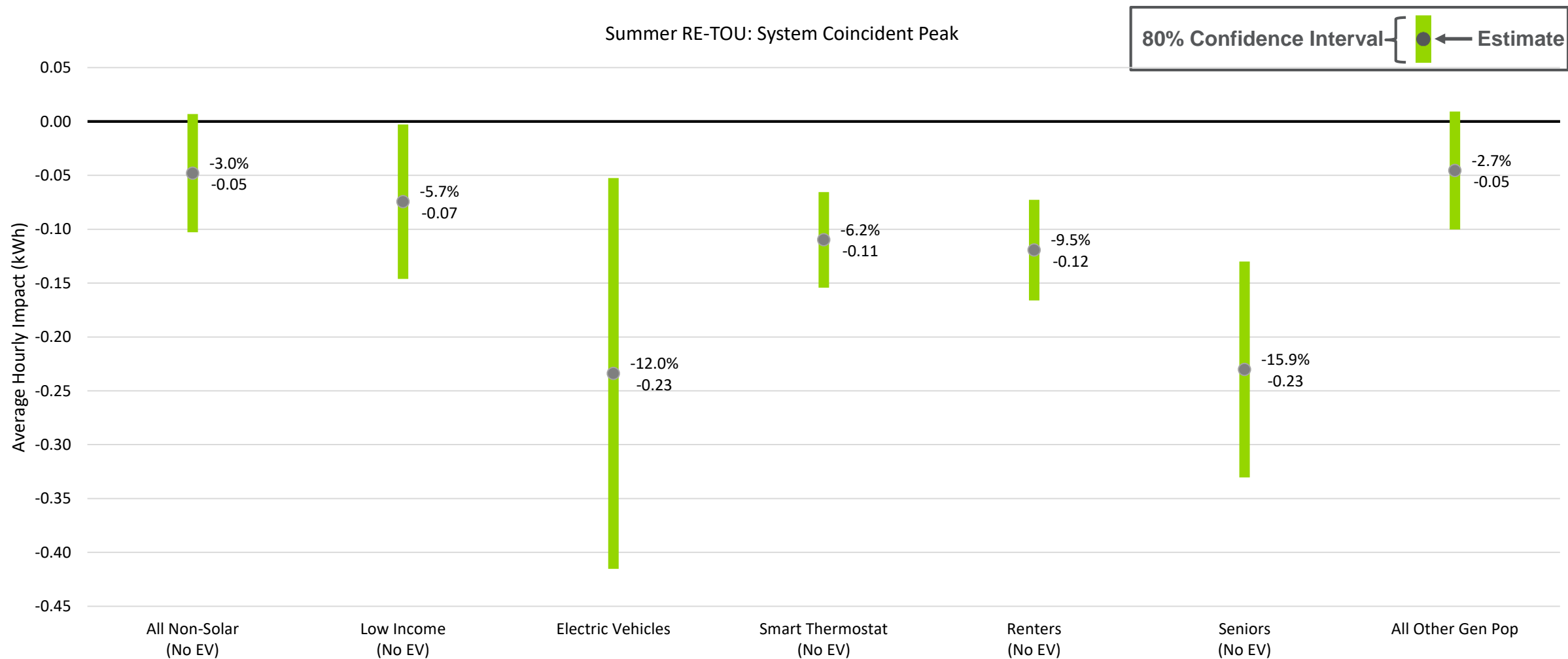
PARTICIPANTS AND CONTROLS AT ANY TIME



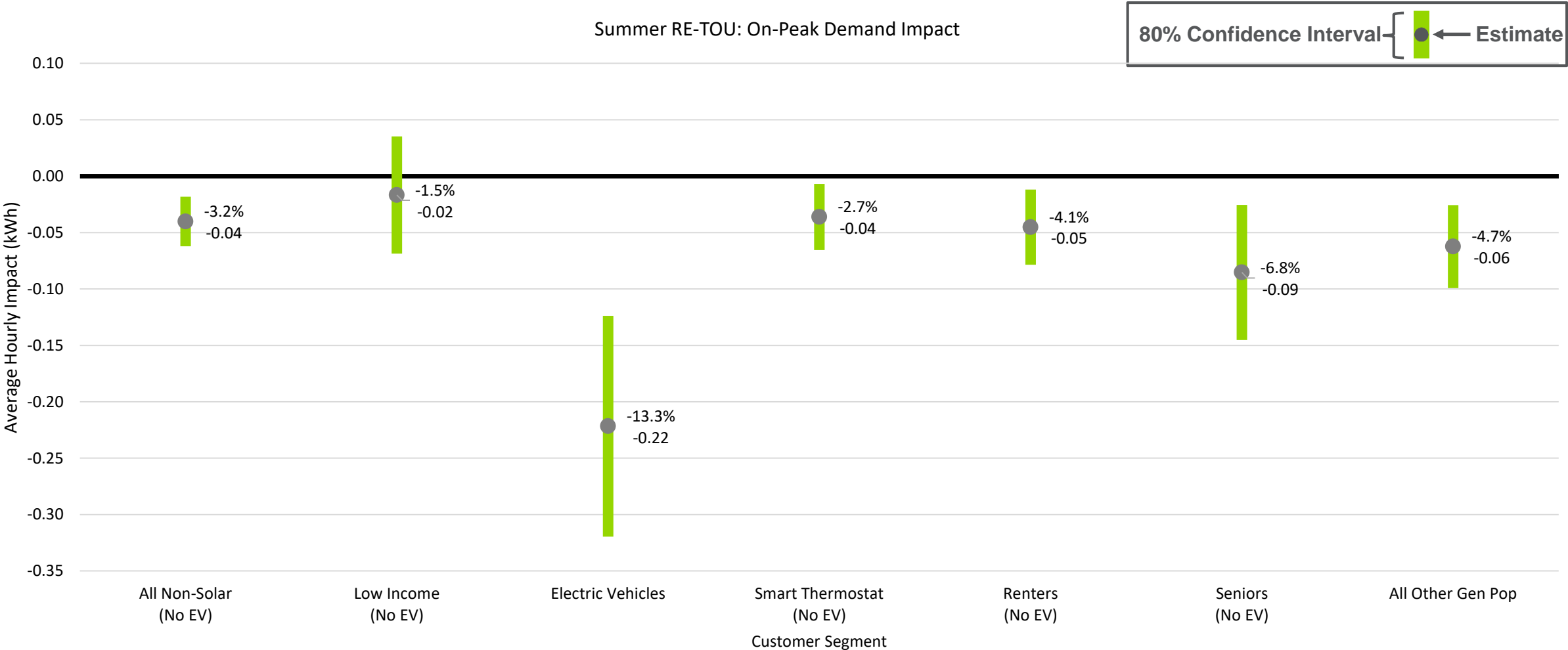
RATE INFORMATION

RE-TOU	Off-Peak	Shoulder	On-Peak	Fixed Charges
Hours	9pm - 9am	9am-2pm, 6pm-9pm on Weekdays, 9am-9pm Weekends	2pm-6pm on Weekdays	Service and Facility
Summer	\$0.08/kWh	\$0.13/kWh	\$0.18/kWh	\$5.41
Winter	\$0.08/kWh	\$0.10/kWh	\$0.14/kWh	\$5.41

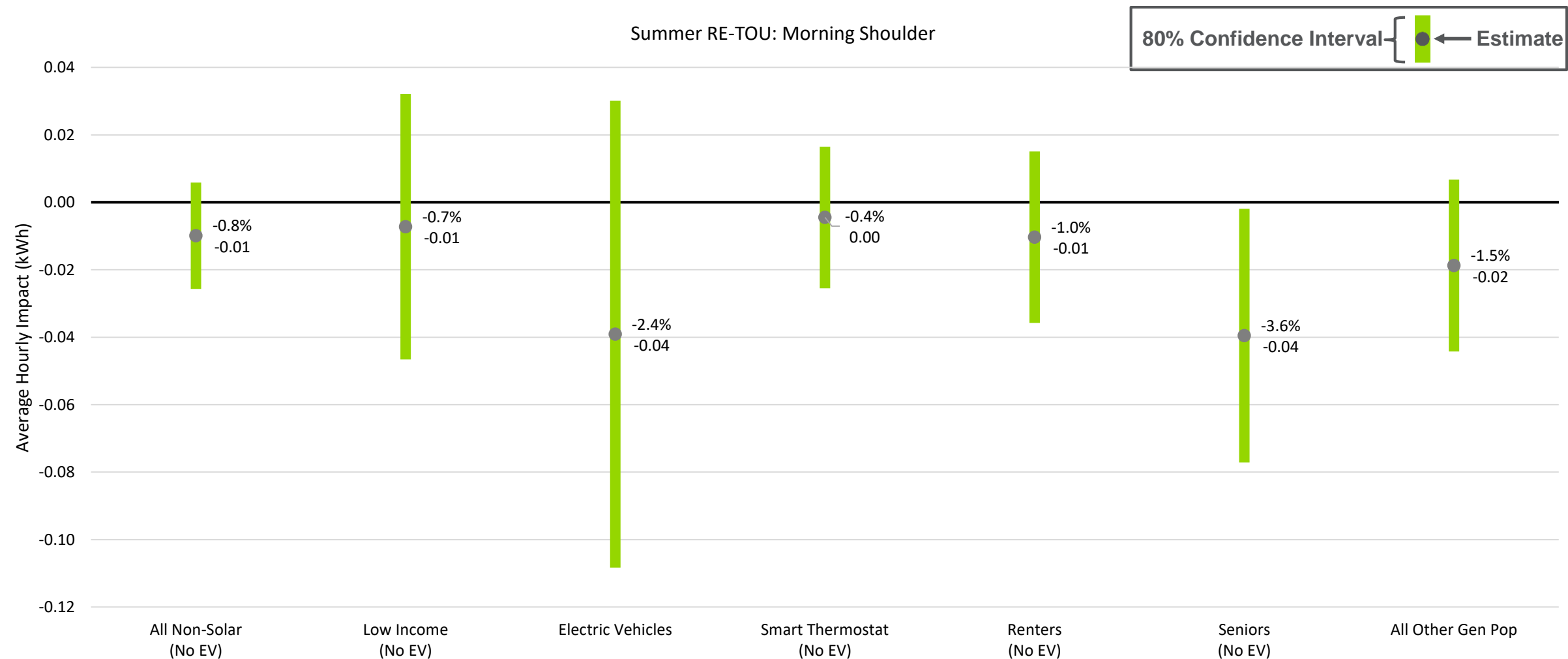
SUMMER RE-TOU SYSTEM COINCIDENT DEMAND IMPACTS BY CUSTOMER SEGMENT



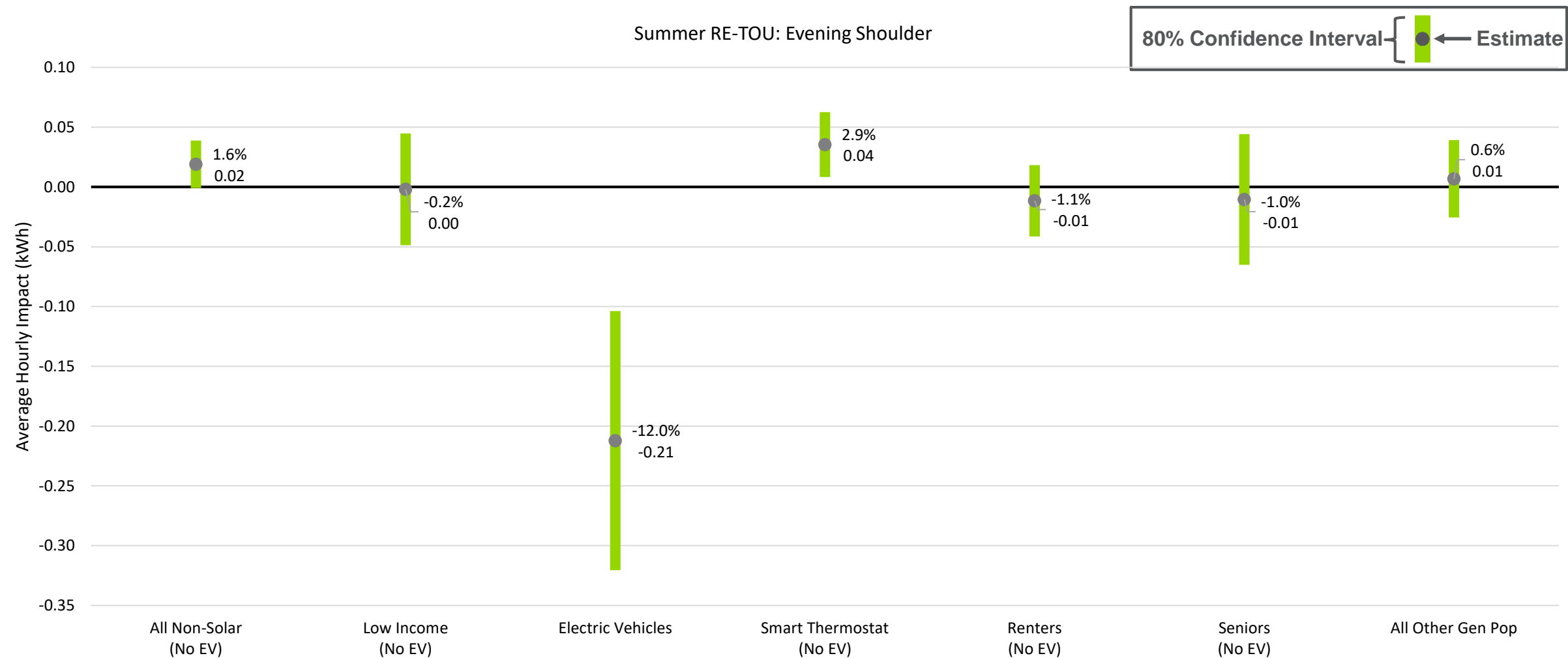
SUMMER RE-TOU ON-PEAK IMPACTS BY CUSTOMER SEGMENT



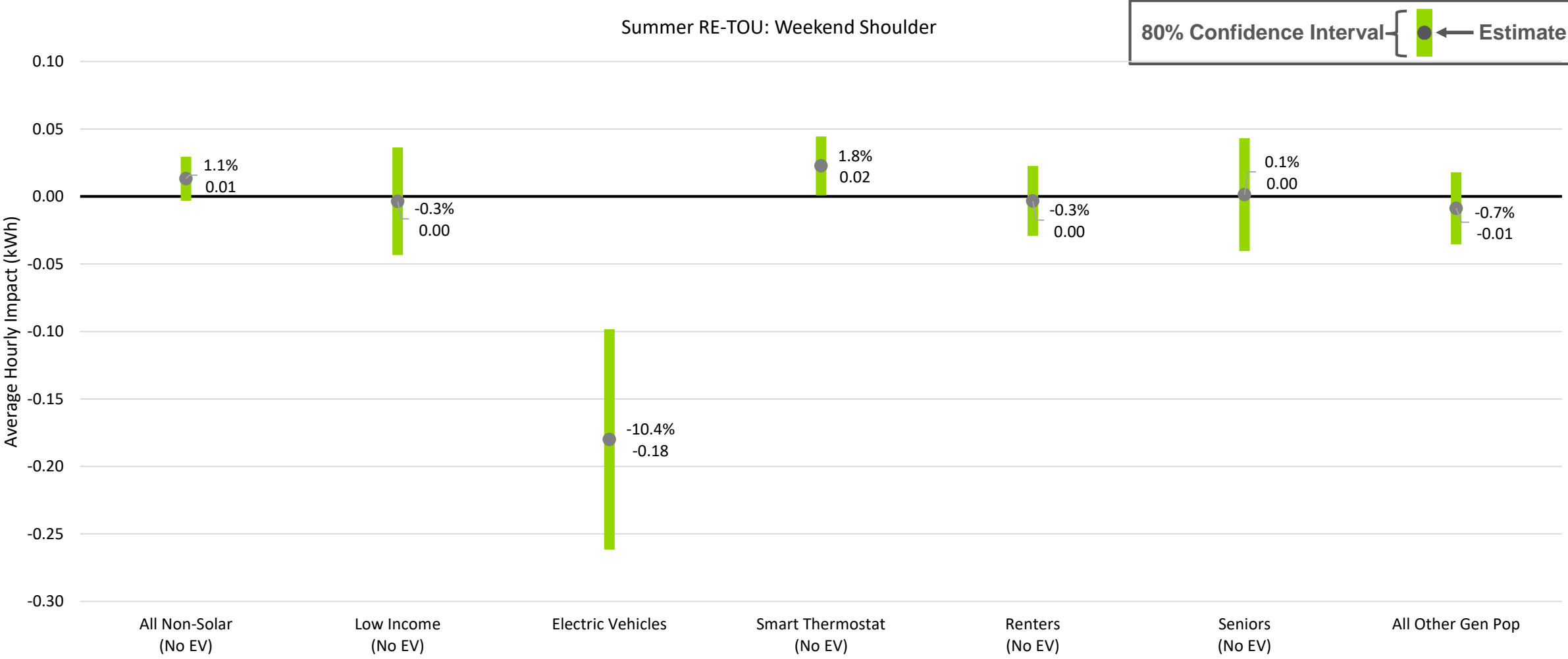
SUMMER RE-TOU MORNING SHOULDER IMPACTS BY CUSTOMER SEGMENT



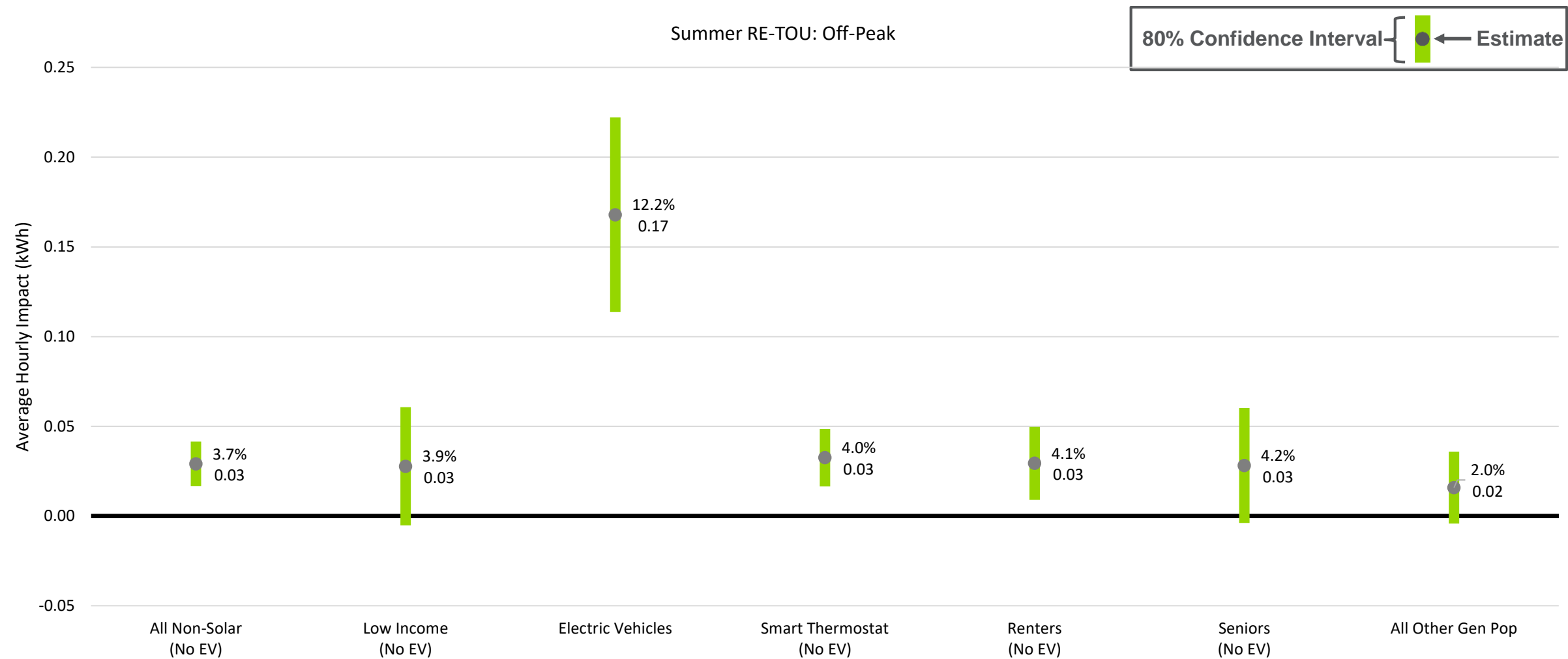
SUMMER RE-TOU EVENING SHOULDER IMPACTS BY CUSTOMER



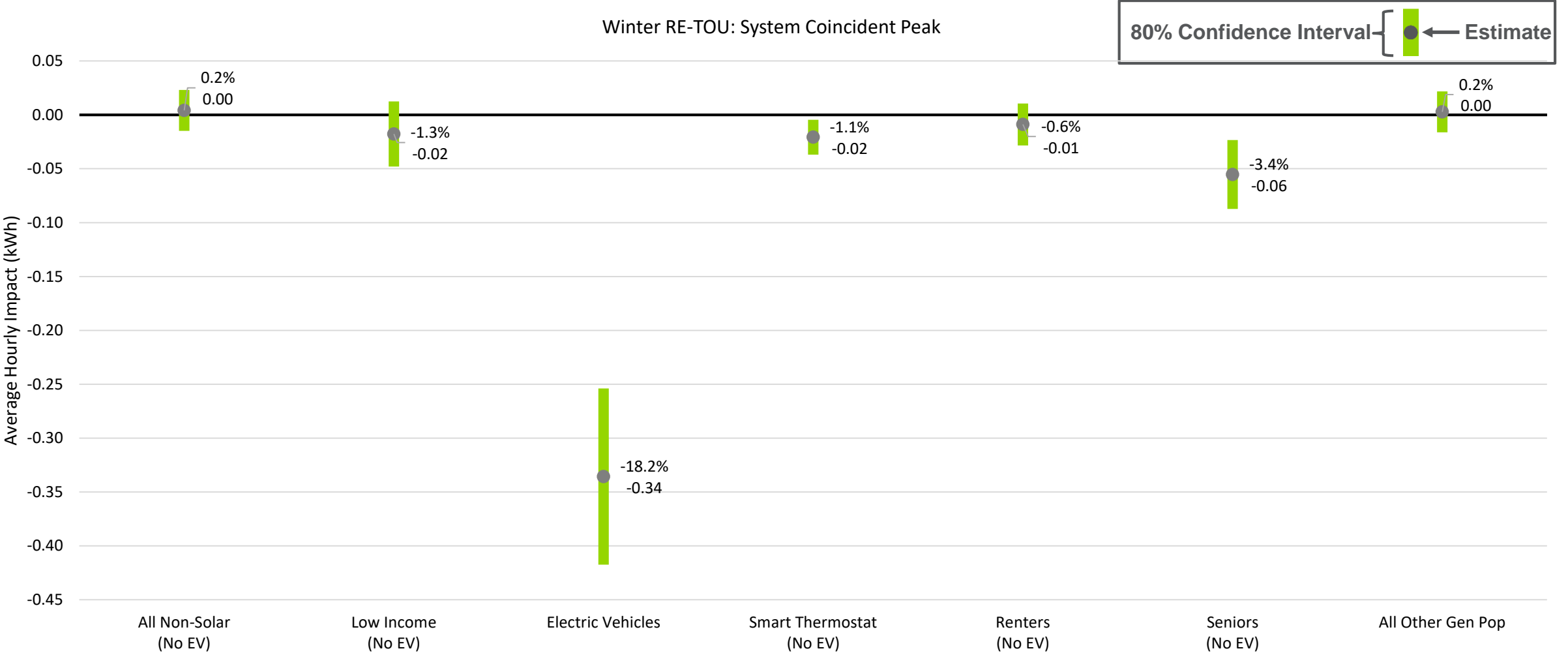
SUMMER RE-TOU WEEKEND SHOULDER IMPACTS BY CUSTOMER SEGMENT



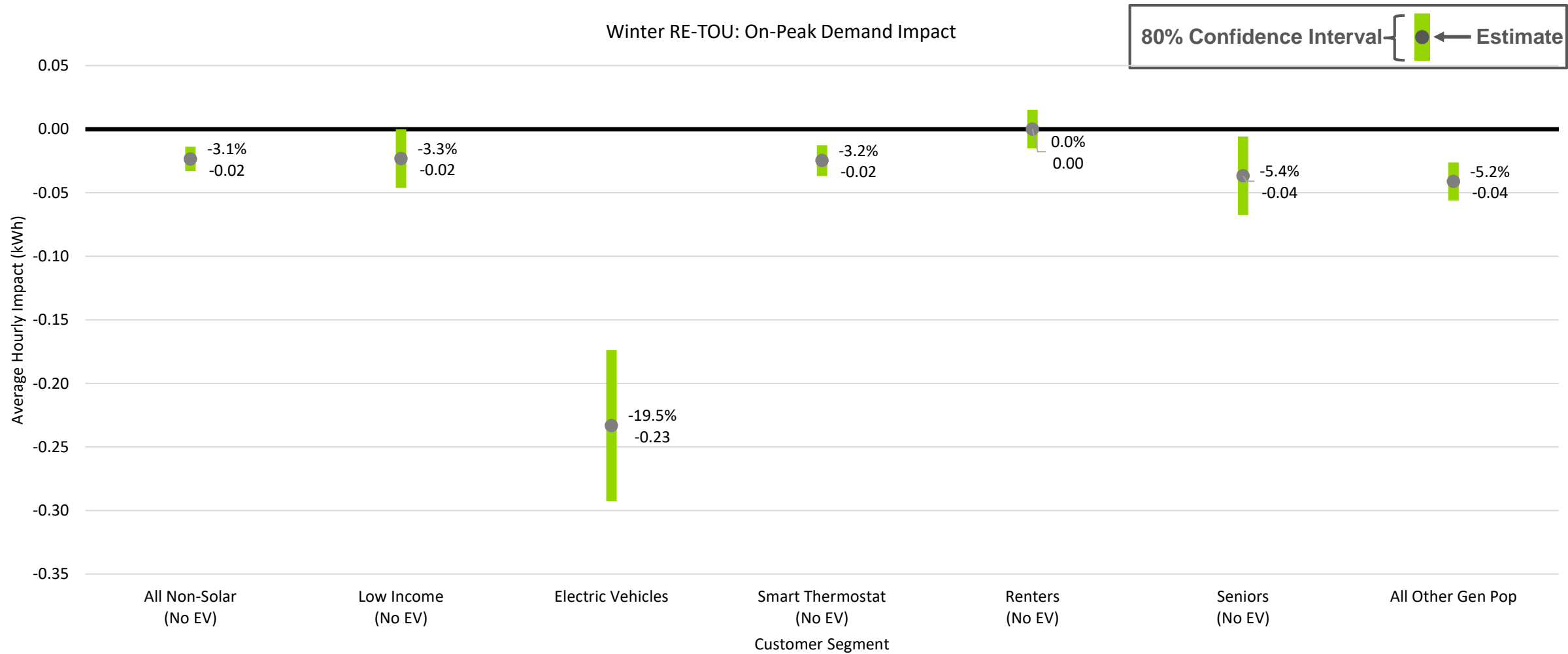
SUMMER RE-TOU OFF-PEAK IMPACTS BY CUSTOMER SEGMENT



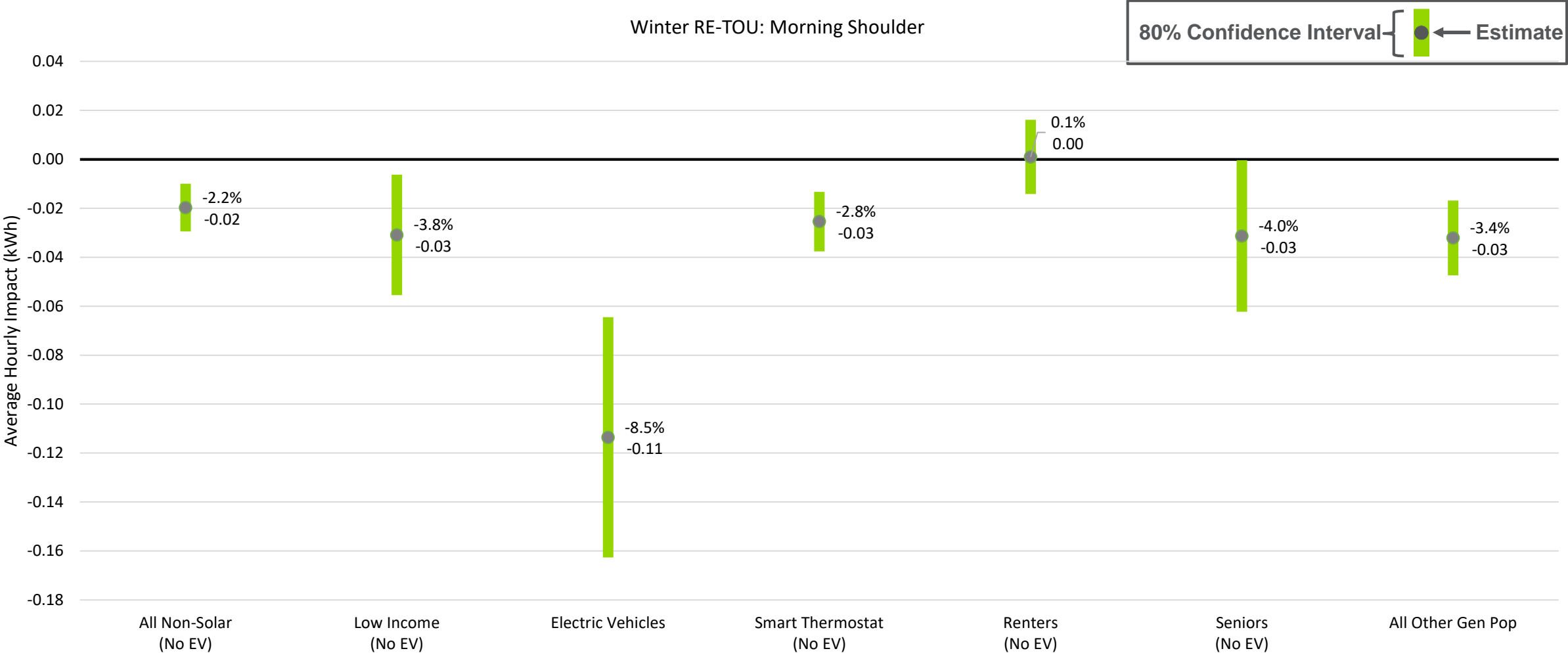
WINTER RE-TOU SYSTEM COINCIDENT DEMAND IMPACTS BY CUSTOMER SEGMENT



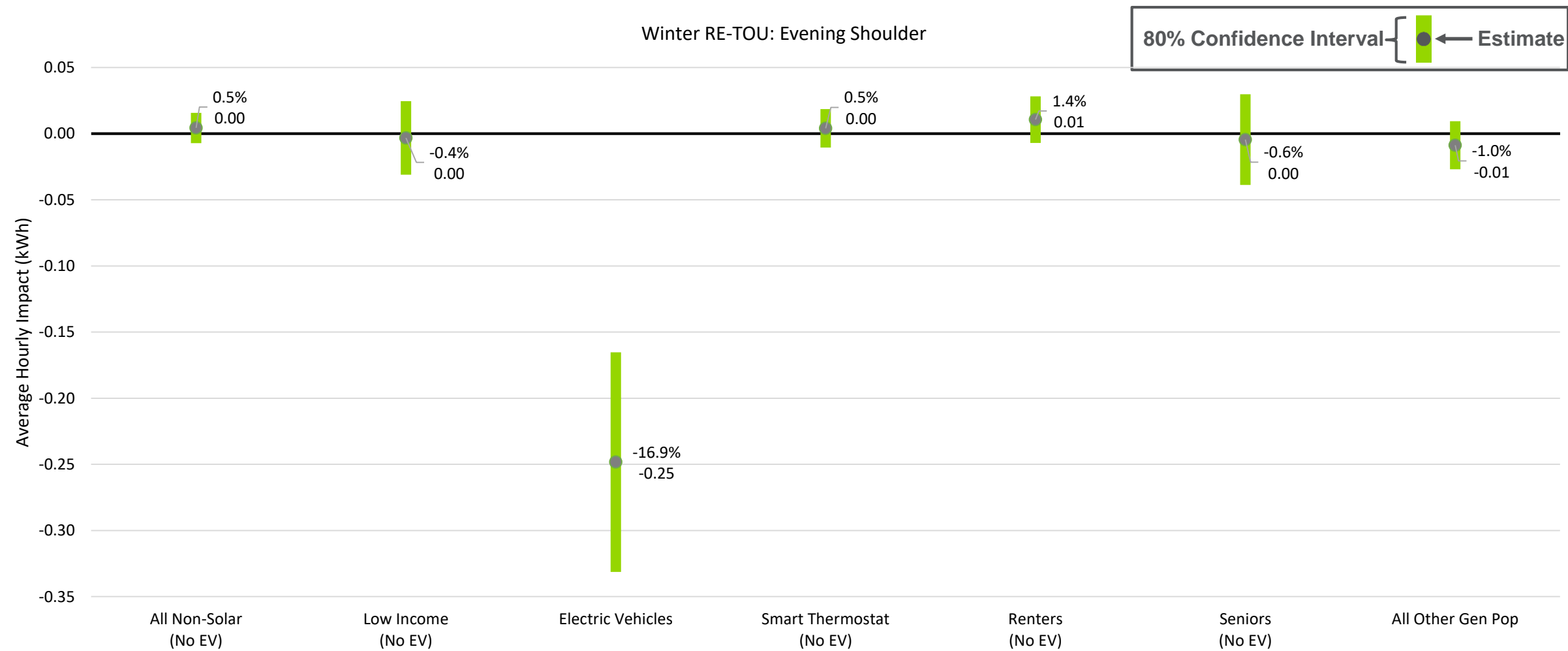
WINTER RE-TOU ON-PEAK IMPACTS BY CUSTOMER SEGMENT



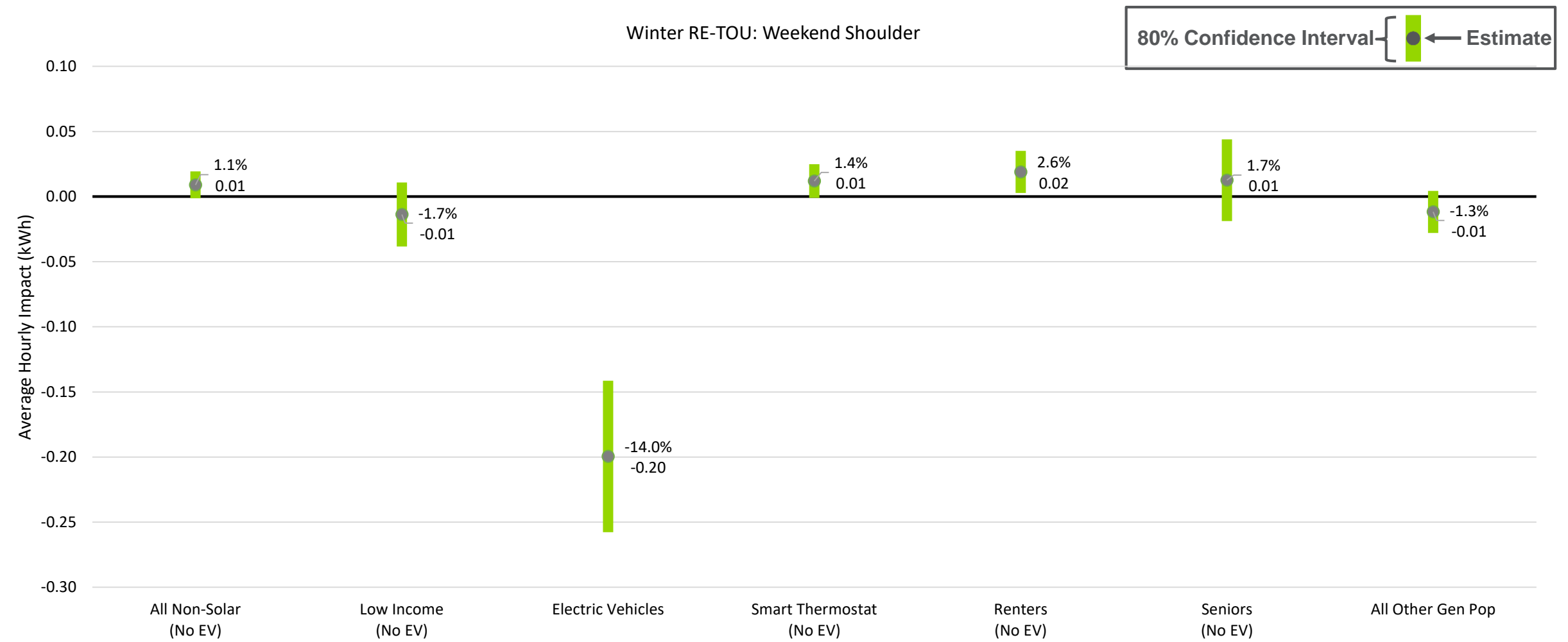
WINTER RE-TOU MORNING SHOULDER IMPACTS BY CUSTOMER SEGMENT



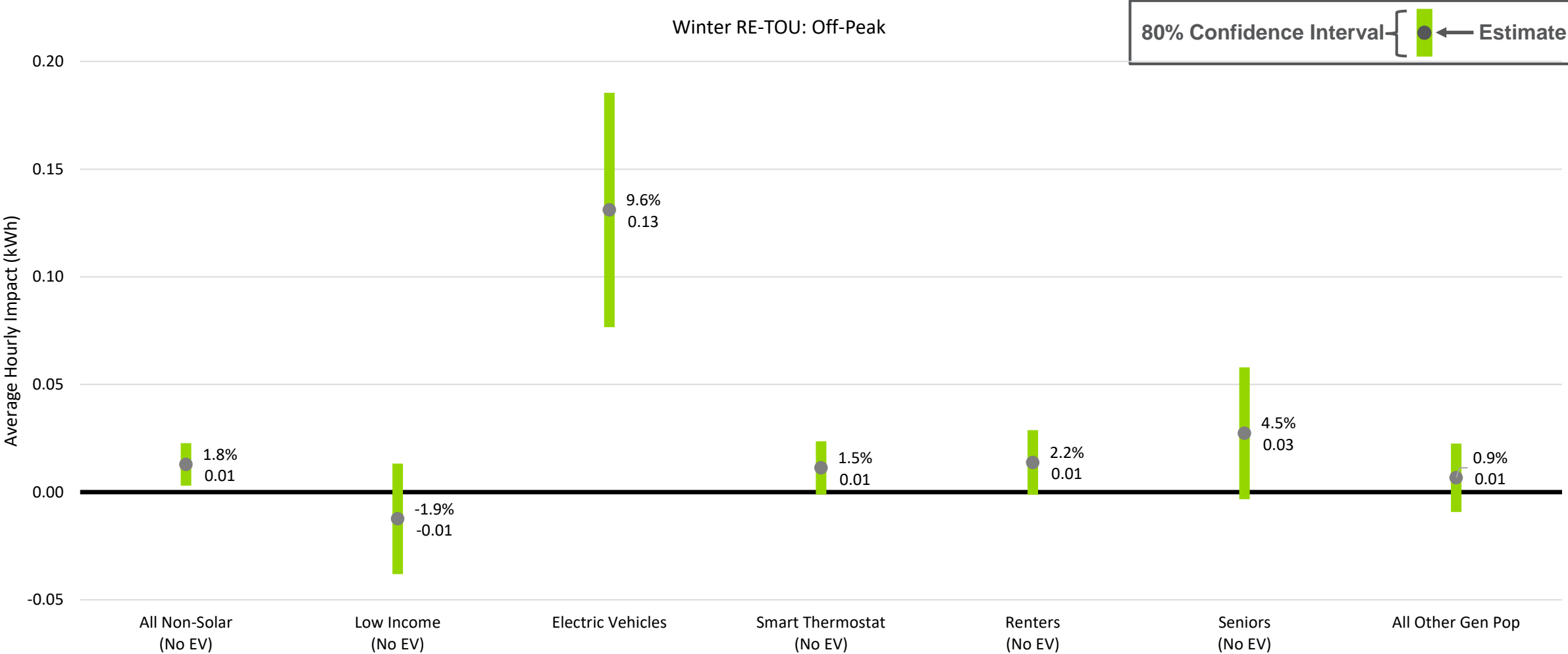
WINTER RE-TOU EVENING SHOULDER IMPACTS BY CUSTOMER SEGMENT



WINTER RE-TOU WEEKEND SHOULDER IMPACTS BY CUSTOMER SEGMENT



WINTER RE-TOU OFF-PEAK IMPACTS BY CUSTOMER SEGMENT



RE-TOU IMPACT ANALYSIS MODELS

Consumption Impact Model

Independent Variable: Hourly Energy Consumption

Dependent Variables: Hour of Day, Weekday, Participant Effects during Pricing Periods, All Customer Effects during Pricing Periods, Cooling Degree Hours (Base 65), Level of Education, Works from Home, Home Type, Home Size, Home Owner or Renter, Occupants by Age Range, Seasonal Peak Demand

$$kWh_{i,t} = \beta_0 \cdot \sum_{j=1}^{24} Hr_j + \beta_1 \cdot Weekday + \beta_2 \cdot Participant \cdot OnPeak + \beta_3 \cdot Participant \cdot ShoulderMorn + \beta_4 \cdot Participant \cdot ShoulderEve + \beta_5 \cdot Participant \cdot ShoulderWeekend + \beta_6 \cdot Participant \cdot OffPeak + \beta_7 \cdot OnPeak + \beta_8 \cdot ShoulderMorn + \beta_9 \cdot ShoulderEve + \beta_{10} \cdot ShoulderWeekend + \beta_{11} \cdot CDH65 + \beta_{12} \cdot Education + \beta_{13} \cdot WorkFromHome + \beta_{14} \cdot HomeType + \beta_{15} \cdot Sqft + \beta_{16} \cdot RentOwn + \beta_{17} \cdot OccupantsUnder10 + \beta_{18} \cdot Occupants11to18 + \beta_{19} \cdot Occupants19to30 + \beta_{20} \cdot Occupants31to61 + \beta_{21} \cdot OccupantsOver62 + \beta_{22} \cdot SeasonPeakDemand + \varepsilon$$

Demand Impact Models

Independent Variable: Coincident Demand for Month

Dependent Variables: Participant Effect, Monthly Usage, Works from Home, Home Type, Owner or Renter, Month-specific Effects

$$kWh_{i,t} = \beta_1 * Participant_{i,t} + \beta_2 * Monthly kWh_{i,t} + \beta_3 * Work from Home_{i,t} + \beta_4 * Home Type_{i,t} + \beta_5 * OwnRent_{i,t} + \beta_6 * \sum Month_{i,t} + \varepsilon_{i,t}$$

WAVE 3 OVERVIEW

Wave 3 Survey: End of Trial Survey (TOU)

Areas of Focus

- 1) Customer satisfaction and customer experience
- 2) Access to information resources and perceived value
- 3) Customer understanding of rate plan
- 4) Changes in customers' energy use behaviors
- 5) Opportunities for enhancing customer experience

Wave 3 Response Rate

Round	Timing	Survey Completes	Response Rate
Wave 3	Aug 2019	1894	36%

Wave 3 Segment Representation

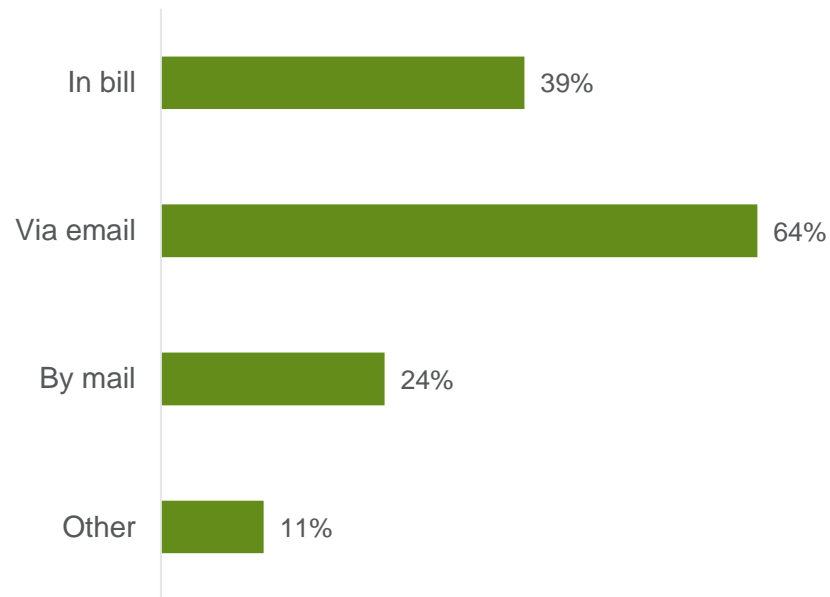
Segment	Survey Completes	% of Total Responses
Low Income	40	2%
Seniors	439	23%
Renters	393	21%
Smart/Prog. Tstat*	1331	70%
EV	303	16%
Solar	379	20%
Genpop	611	32%

*Smart thermostat = 520 respondents, 28% of total; Programmable thermostat = 977 respondents 52% of total. Some customers indicated they had both types of thermostats.

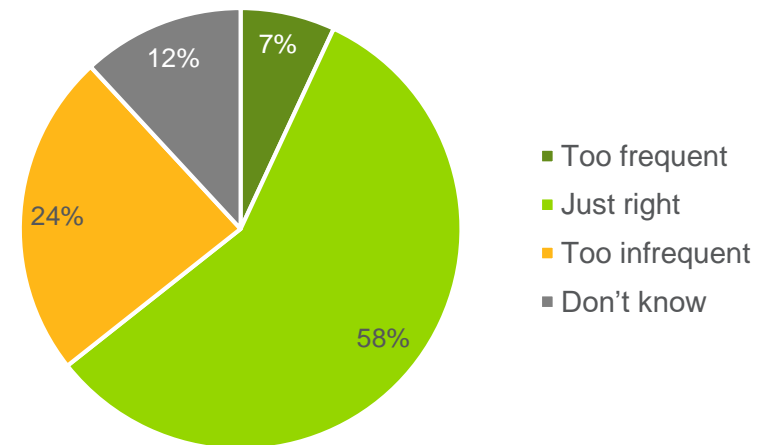
WAVE 3: INFORMATION RESOURCES

- Customers are most aware of information received via email (64%).
- Most participants (58%) think the frequency of communications about the plan is “just right” although 24% would like more frequent communications.

Awareness of receiving pricing plan information (n=1889)

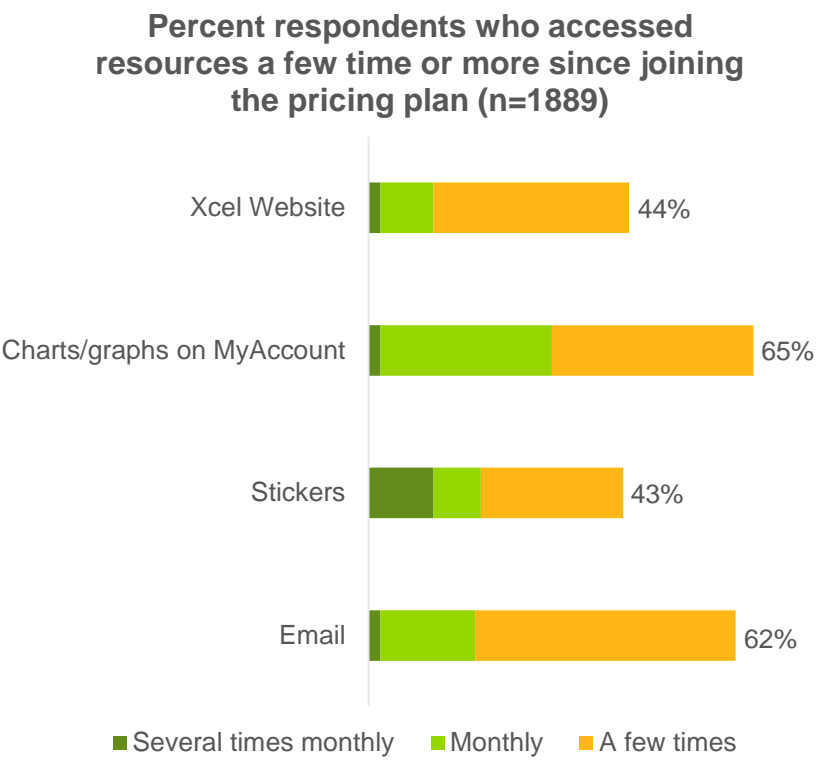
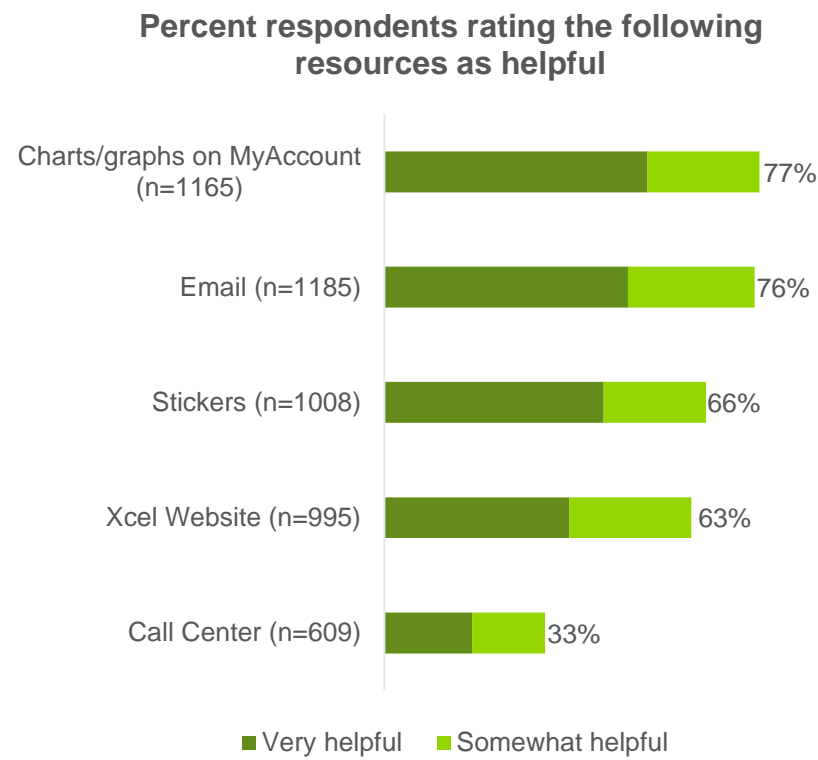


Frequency of communications about rate plan (n=1889)



WAVE 3: INFORMATION RESOURCES

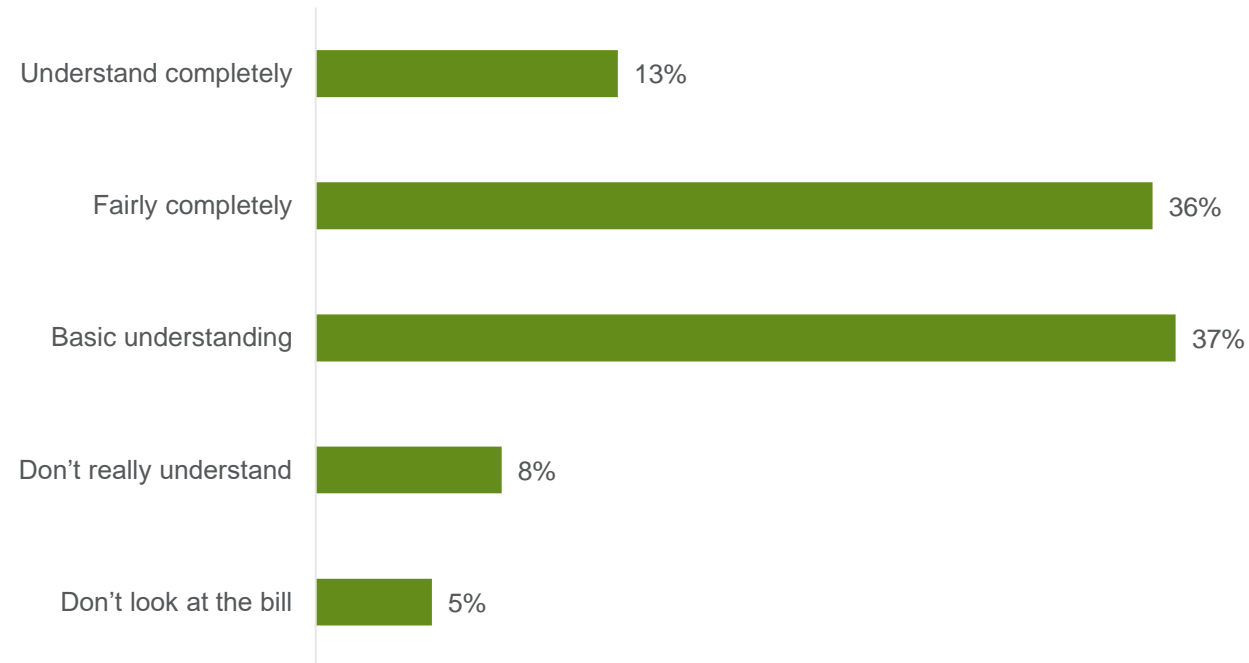
- The most helpful information is provided via emails and MyAccount (Call center was least helpful.)
- Information on MyAccount is accessed most often with 31% of respondents using it monthly or more often.



WAVE 3: KNOWLEDGE AND UNDERSTANDING

- Nearly half of customers (49%) report a fairly complete or complete understanding of the bill.

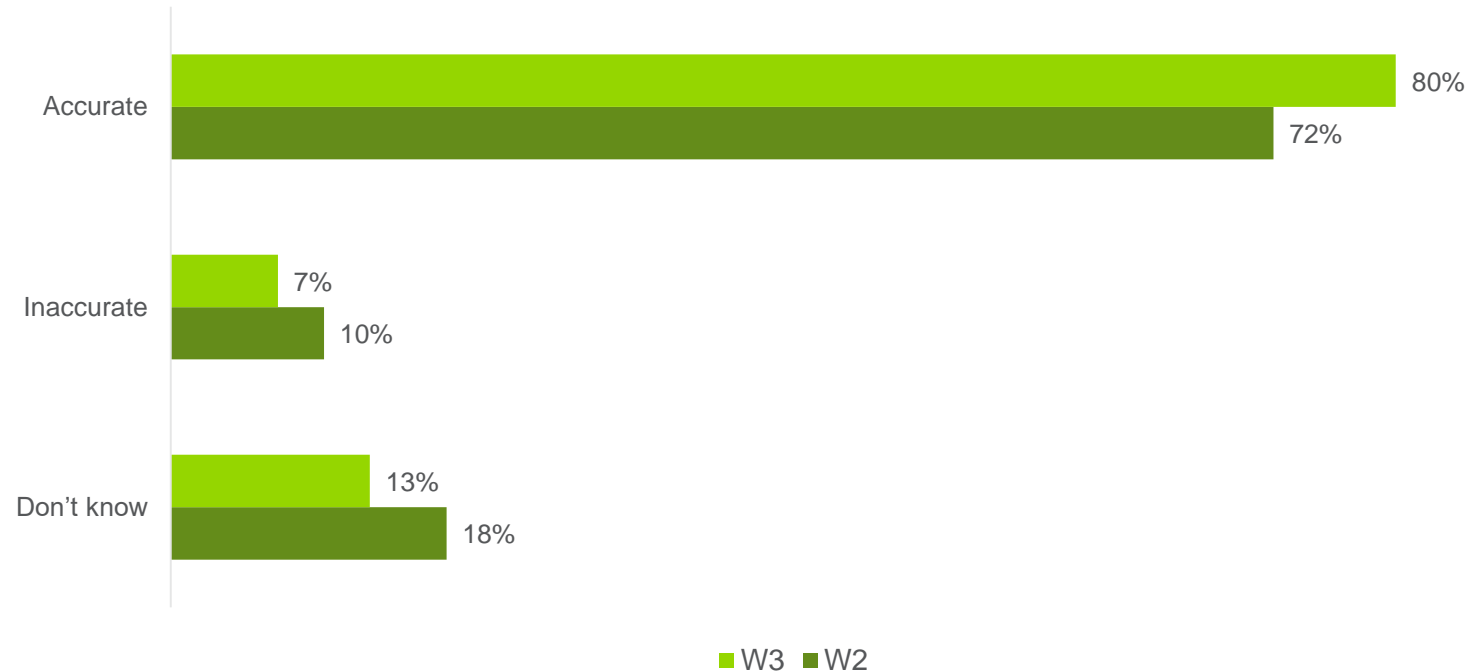
Participant self reported understanding of energy bill (n=1894)



WAVE 3: KNOWLEDGE AND UNDERSTANDING

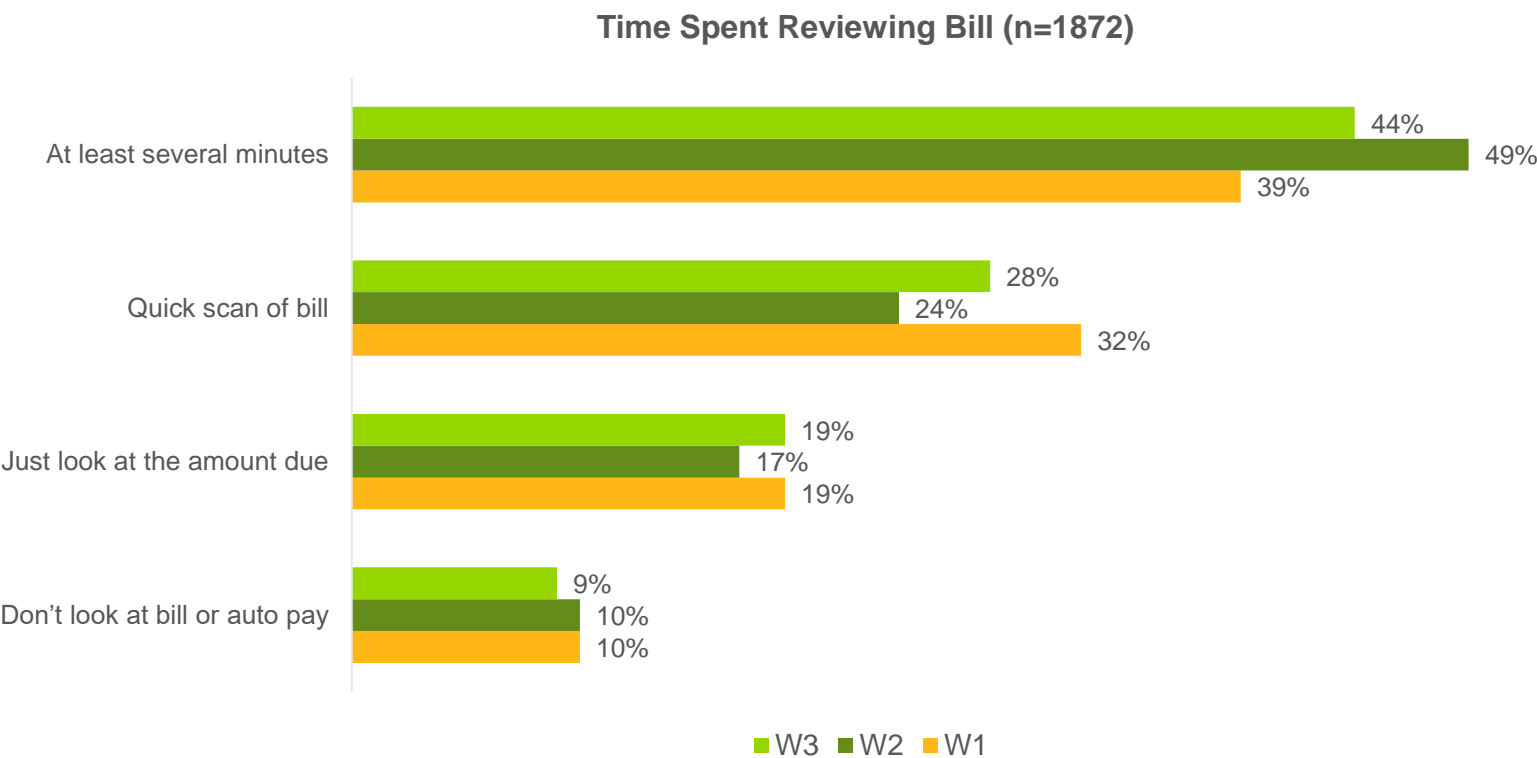
- Customer understanding of the key elements of the rate plan is high (80%) and appears to have increased from 72% in Wave 2.

Participant reported accuracy of the following statement: “Under the TOU pricing plan, there are three different prices for electricity on any given weekday (unless it is a holiday).” (n=1894)



WAVE 3: CUSTOMER ENGAGEMENT AND BEHAVIOR

- A large proportion of customers report spending at least several minutes reviewing their bill in Waves 2 (49%) and Wave 3 (44%) compared to earlier findings from Wave 1 post-enrollment surveys (39%).
- Time spent reviewing the bill may decline as customers become more comfortable with the rate plan.

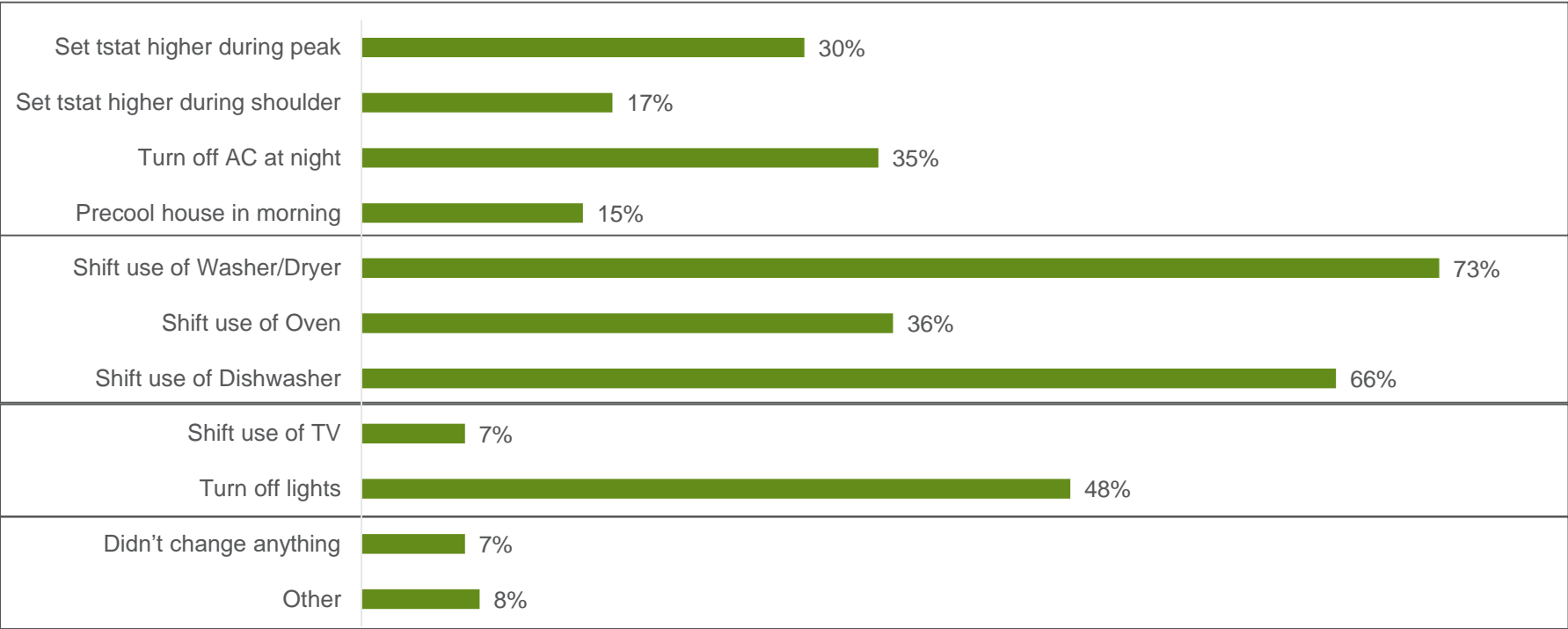


WAVE 3: CUSTOMER ENGAGEMENT AND BEHAVIOR

New AC Strategies – Customers report that they are:

- Increasing thermostat settings during peak (30%) and shoulder (17%) periods
- Shifting their use of appliances (especially dishwasher and clothes washer/dryer)

New behaviors adopted after enrollment (n=1889)

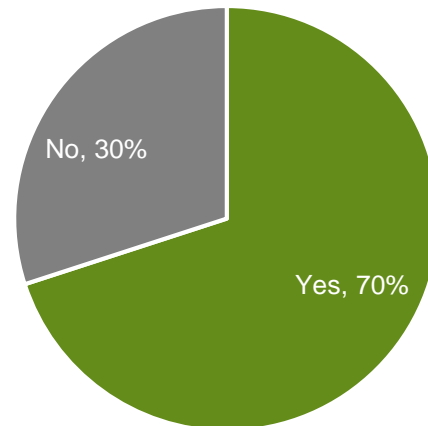


WAVE 3: CUSTOMER ENGAGEMENT AND BEHAVIOR

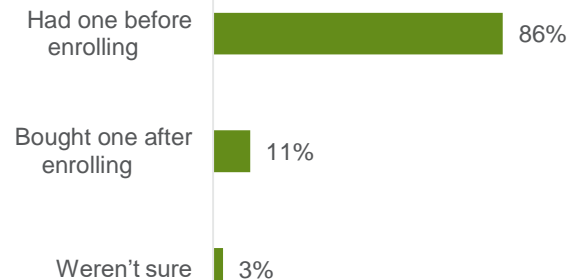
Thermostat Saturation and Use

- Roughly 70% of respondents currently have a smart or programmable thermostat.
- 11% of households installed a smart or programmable thermostat after enrolling.
- 80% of customers with a smart/programmable thermostat reported that they had programmed it.
- Of those who had not programmed or reprogrammed their thermostat after enrolling, 42% said they would be interested in having Xcel program/optimize their thermostat settings.

Respondents who have a smart/programmable thermostat (n=1889)



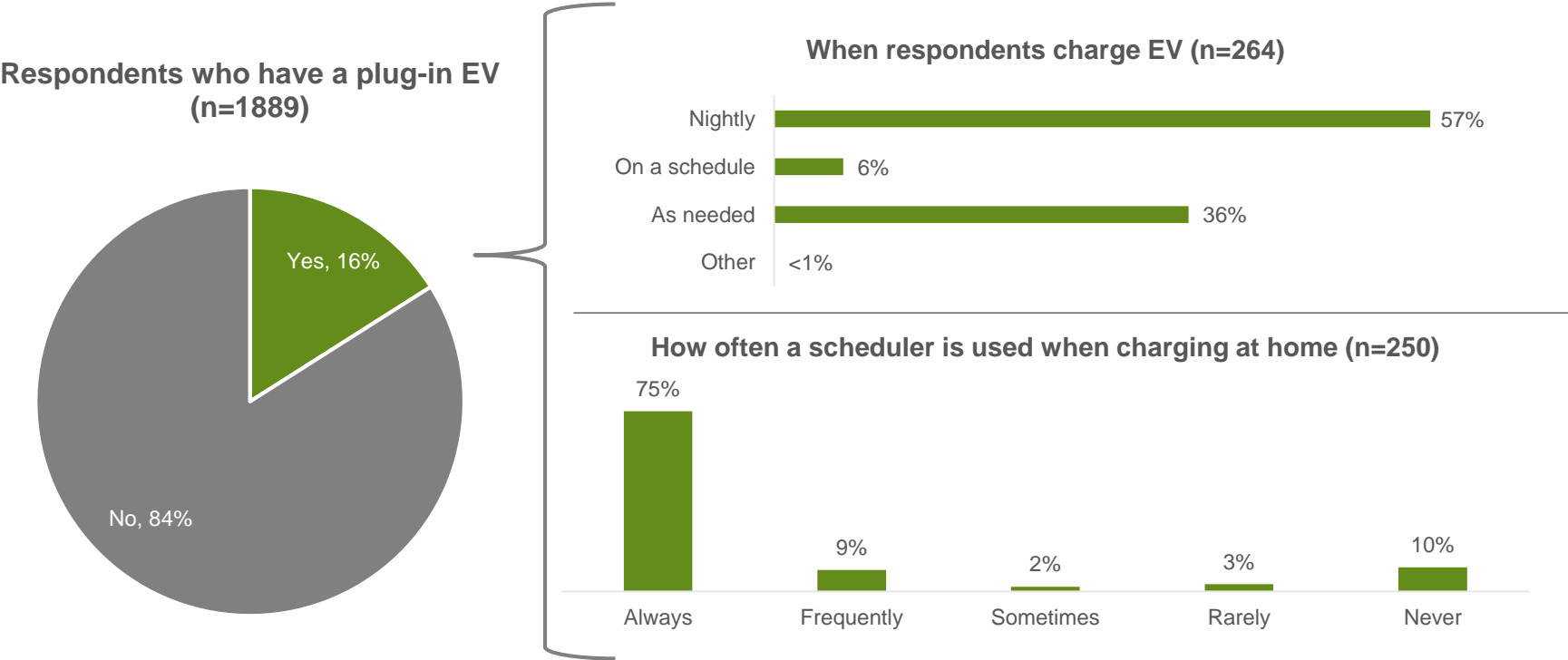
When participant purchased thermostat (n=1331)



WAVE 3: CUSTOMER ENGAGEMENT AND BEHAVIOR

Electric Vehicle Saturation and Use

- 16% of respondents (303 customers) reported having a plug-in EV (up from 6% in Wave 1)
- 57% charge nightly; 36% charge as needed
- 75% always use a scheduler when they charge at home; 10% never use a scheduler



WAVE 3: HOW IMPORTANT IS CUSTOMER “TIME SPENT WITH BILL”?

The amount of time that customers spend with their bill is significantly correlated with several measures of behavior change as shown below.

Time Spent with Bill	Several Minutes or More	Glance or Less
Set their tstat higher (Avg. settings)		
During peak*	75.6	75.2
At night*	73.4	73.0
When away*	77.2	76.6
Never/rarely use appliance during peak		
Dishwasher	82%	78%
Clothes Dryer	76%	69%
Change in mean frequency of appliance use during peak (before and after enrollment)		
AC***	0.505	0.308
Electric Oven***	0.656	0.498
Dishwasher**	1.060	0.900
Clothes Dryer***	1.160	0.971

***Significant at .001 *Significant at .05 (one-tailed test)

WAVE 3: HOW IMPORTANT IS CUSTOMER UNDERSTANDING OF THE BILL?

Customer understanding of the bill is related to several measures of behavior change as shown below.

Understanding of Bill	Higher	Lower
Never/rarely use appliance during peak		
Air conditioner	36%	30%
Dishwasher	84%	75%
Clothes Dryer	78%	68%
Use more effective AC strategies		
Set AC higher during peak	33%	28%
Set AC higher during shoulder	19%	16%
Precool	17%	13%
Set their tstat higher (Avg. settings)		
During peak***	75.8	75.1
Shoulder**	74.9	74.3
Weekend**	74.7	74.2
At night**	73.5	72.9
When away**	77.3	76.5

***Significant at .001 **Significant at .01 *Significant at .05 (two-tailed test)

WAVE 3: HOW IMPORTANT IS CUSTOMER UNDERSTANDING OF THE RATE?

Customers understanding of how the rate plan works is related to several measures of behavior change as shown below..

Understanding of Rate Plan	Higher	Lower
Never/rarely use appliance during peak		
Dishwasher	81%	77%
Clothes Dryer	75%	69%
Use more effective AC strategies		
Set multiple thermostat settings per day	38%	27%
Less likely to lower AC settings btwn 2-6	6%	11%
Set their tstat higher (Avg. settings)		
During peak***	75.7	73.9
Shoulder**	74.7	73.7
Weekend**	74.6	73.3
Away*	77.2	75.8
Difference Peak/Shoulder*	1.02	0.35

***Significant at .001 **Significant at .01 *Significant at .05 (two-tailed test)

WAVE 3: ARE THE ACTIONS OF SENIORS DIFFERENT THAN OTHERS?

Seniors appear to be different from other participants as shown below.

Segment of Interest	Senior	Others
Never/rarely use appliance during peak		
Dishwasher	83%	79%
Clothes Dryer	76%	71%
Use certain AC strategies		
Set AC higher during peak	31%	26%
Turn AC off at night	39%	26%
Precool	10%	16%
Use multiple thermostat settings	31%	36%
Set their tstat higher (Avg. settings)		
During peak**	75.9	75.3
Shoulder***	75.6	74.3
Weekend***	75.7	74.1
At night***	74.8	72.8
When away**	77.7	76.6
Difference Peak/Shoulder***	0.4	1.0

***Significant at .001 **Significant at .01 *Significant at .05 (two-tailed test)

WAVE 3: ARE THE ACTIONS OF RENTERS DIFFERENT THAN OTHERS?

Renters appear to be different from other participants as shown below.

Segment of Interest	Renters	Others
Never/rarely use appliance during peak		
Air Conditioner	30%	34%
Dishwasher	73%	81%
Clothes Dryer	64%	74%
Use certain AC strategies		
Use multiple thermostat settings	28%	37%
Turn AC off at night	19%	31%
Use AC only when really hot outside	32%	26%
Set their tstat lower (Avg. settings)		
During peak***	74.2	75.7
Shoulder***	73.6	74.8
Weekend***	73.3	74.7
At night***	72.1	73.5
When away***	75.5	77.2
Difference Peak/Shoulder	0.62	0.94

***Significant at .001 **Significant at .01 *Significant at .05 (two-tailed test)

WAVE 3: ARE THE ACTIONS OF CUSTOMERS WITH SMART/PROGRAMMABLE THERMOSTATS DIFFERENT THAN OTHERS?

Customers with Smart/Programmable thermostats appear to be different from other participants as shown below.

Segment of Interest	TStat	Others
Never/rarely use appliance during peak Air Conditioner	33%	33%
Use certain AC strategies		
Set AC higher during peak	35%	19%
Set AC higher during shoulder	20%	12%
Precool	16%	12%
Use multiple thermostat settings	40%	22%
Turn off AC at night	30%	24%
Use AC only when hot outside	26%	32%
Set their tstat higher (Avg. settings)		
During peak***	75.7	74.3
Shoulder***	74.8	73.8
Weekend***	74.7	73.5
At night***	73.4	72.2
When away***	77.2	75.5
Difference Peak/Shoulder*	0.96	1.0

***Significant at .001 **Significant at .01 *Significant at .05 (two-tailed test)